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FOOD CONSUMPTION, NUTRIENT INTAKE AND AGRICULTURAL PRODUCTION IN INDIA

U.S. Department of Agriculture
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WITH

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October 1986

by
Robert E. Evenson

for
Nutrition Economics Group
Technical Assistance Division
Office of International Cooperation and Development
United States Department of Agriculture

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Executive Summary

Over the past decade foodgrain production in India has increased more rapidly than the demand for foodgrains at prevailing prices. India has moved from a substantial foodgrain importing position 15 years ago to a position where substantial foodgrain stocks are now being held. Food consumption data from the National Sample Survey Organization (NSSO) and the National Nutrition Monitoring Bureau (NNMB) have recently become available. This study assesses changes in food consumption over the 1952 to 1982-83 period. It also discusses the relationship between changes in food consumption and changes in foodgrain production.

The assessment of changes in food consumption showed that:

a) Average per capita food consumption declined during the 1950s and 1960s in both rural and urban India.

b) During the 1970s and early 1980s average food consumption rose from its level in the late 1960s in urban areas and was roughly unchanged in rural areas in India.

c) The consumption of wheat increased significantly. The consumption of pulses declined over the earlier period.

d) For the poorest deciles, food consumption in rural areas was roughly constant over the entire period. It rose in the 1950s, declined in the 1960s and rose slightly in the 1970s and early 1980s. For urban areas, the food consumption of the poorest deciles declined over the entire period. In the 1950s the urban poor had higher levels of food consumption than the rural poor. During the 1960s the urban poor experienced a decline in consumption. The modest increases in consumption in the 1970s left the urban poor with lower levels of food consumption than in the 1950s.

e) The bulk of the decline in average food consumption (and in the consumption of nonfood items as well) was experienced by the higher income deciles. Thus the distribution of consumption has become more equal, but without an improvement in the position of the poorest families.

f) Nutrient intake (calories and protein) data show similar patterns over time. The diets of the poorest deciles in both rural and urban areas are inadequate by any standard. The adequacy of the diet for the rural poor has improved slightly in recent years. The adequacy of the diet of the urban poor deteriorated during the 1950s and 1960s and shows little improvement in recent years. The diet of the urban poor is now less adequate than is the diet of the rural poor.

The increased production of foodgrains affected consumption through prices on incomes and was an important factor in arresting the declining consumption trends of the 1950s and 1960s. Food prices rose less rapidly than did nonfood prices after 1970 and thus price changes favored the poor in relative terms. Prices of cereals moved downward relative to other prices, but the price of pulses moved upward accounting for the shift in consumption away from pulses and the consequent decline in the quality of the diet.

A more general economic analysis of the market forces behind these trends showed that the rapid population growth combined with relatively slow growth in foodgrain supply in the 1950s and 1960s led to reduced average consumption of food but did not explain the relatively more rapid declines in the higher deciles. The fair price grain distribution system may have prevented more serious declines in food consumption in the lower deciles over this period.

The improved foodgrains supply situation in the 1970s and early 1980s halted this process.

A statistical analysis of NNMB data provided some evidence that the midday meal program in India was impacting on nutritional status and child health. Other program variables, including integrated Rural Development Program inputs were not strongly identified with improved dietary adequacy or nutritional status, but the nature of the data required further work before more definite statements can be made.

FOREWORD

The Nutrition Economics Group was created in 1977 with funding from AID's Office of Nutrition. The Group's staff of economists help AID implement a program of applied research and technical assistance designed to assist developing countries integrate food consumption and nutrition concerns into their agricultural planning, programming and policy making processes. Located within the Technical Assistance Division of the Office of International Cooperation and Development (OICD) within the Department of Agriculture, the Group can also draw on a wide variety of other specialists from within the Department as well as the U.S. university community and private sector to complement its work.

Much of the work that the Group has supported in the past has focussed on specific agricultural and other economic development policies and their effects on the consumption patterns and nutrient intakes of groups likely to be at risk of malnutrition in developing countries. The work reported herein has a slightly different but related focus, i.e., it attempts to assess whether and to what extent low income consumers and other nutritionally vulnerable groups in rural India have benefitted from the nature and pace of agricultural change.

The work was undertaken at the specific request of and funded by the AID Mission in India. The specific tasks which were set forth by the Mission were to (1) analyze the consumption patterns of low income consumer groups, particularly those in rural areas and (2) examine the extent to which changes in these consumption patterns over time have been associated with the introduction of agricultural technology as well as the advent of other agricultural changes. The data base for the analysis comes from the Indian National Sample Survey and the National Nutrition Monitoring Bureau.

Dr. Robert Evenson, the author, is an economist from Yale University. He was selected to undertake this work on the basis of his vast previous research experinece in Asia and in the subject matter area being addressed. Dr. William Whelan, an agricultural economist with the Nutrition Economics Group, was responsible for supervising this work for the Group as well as for providing some initial background research for the Mission directly. Ms. Mary Ann Anderson, Chief of the Nutrition Division, Office of Health and Nutrition, was our prime contact in the Mission.

Roberta van Haeften
Chief, Nutrition Economics Branch
October 1986

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Food Consumption, Nutrient Intake and Agricultural Production in India

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Yale University

India's foodgrain production has increased at a sufficiently rapid pace in recent years that substantial stocks of grains (particularly of wheat) are now being accumulated. Against this background of a relatively good food production record in recent years, it is timely to review food consumption data and to analyze the relationship between the production and consumption data.

Consumption and expenditure data from India's National Sample Survey Organization (NSSO) have been subject to extensive analysis from the first round (1951-52) through the 28th round (1973-4). Long delays in the release of quantity data for the 32nd round (1977-78) have meant that little analysis of these data has been made to date (Ahluwalia 1986, does utilize 32nd round data in a poverty analysis). The recent release of 32nd round quantity data and of partial 38th round (1983) expenditure data provides a basis for a substantial updating of food consumption, expenditure and nutrient intake time series data.

The studies of the National Nutrition Monitoring Bureau (NNMB) undertaken in 10 states beginning in 1974 provide a basis for comparison of NSSO and NNMB data on food consumption and nutrient intake for the most recent period. In addition, these data may be compared with the panel data set of the NCAER rural incomes study and with food "availability" data from the Central Statistical Organization (CSO).

This report has two major objectives. The first is to examine food consumption data for both rural and urban India and to assess changes over time in both average per capita consumption and in the consumption of decile groups (ranked by expenditure). The second is to examine the relationship between food production and food consumption.

Section I of this paper is directed toward the first objective; Section II is directed toward the second. The final section discusses policy issues facing India.

This study was undertaken for the USAID mission in New Delhi in collaboration with Dr. Saraj Gupta of the Techno Economic Research Institute. Mary Ann Anderson of USAID-New Delhi was the key contact person having initiated the planning of the study. Other USAID-New Delhi contacts were O. Cylke, R. Blue, C. Crowley, M.G. Gupta, Peter Thormann, J. Kantner, Max Lowdermilk, and Dr. Devendra Gupta. Dr. P.C. Bansil of Techno Economic Research Institute facilitated the study. Raj K. Bhatia, Software Development Corporation provided able computer assistance.

I. Food Consumption, Nutrient Intake and Health Status

A number of comparative studies of food consumption in India have been made in recent years although none have utilized the most recent NSSO round data. A review of these studies is reported in Appendix 1 of this report. An extensive bibliography is also appended.

The reporting of the NSSO survey data by round and by income class has stimulated many studies concerned with the distribution of consumption. A study by Dandekar and Rath (1971) defined poverty levels for rural and urban India and stimulated a number of further studies of poverty (Srinivasan and Bardhan 1974, Mellor and Desai 1986). Many studies of nutrition intake and food consumption have also been based on the NSSO data. Of particular relevance to the present data survey is a study by George (1979) comparing survey data for 1964-5 and 1973-4. This comparison showed a decline in food consumption over this period of approximately ten percent in both rural and urban areas. However, the study concluded that no decline had taken place in the consumption of the lowest expenditure quartile.

A. NSSO Survey Data

1. Adjustments and Procedures

The NSSO data require two types of adjustments before consistent estimates of expenditure decile group consumption can be made. The first is to obtain consistent price deflators to enable the measurement of real consumption over time and across decile groups. The second entails the conversion of nominal expenditure class data into decile class data.

Appendix 2 provides an extended discussion of the NSSO data and the methods used to make the price adjustments and the decile estimates. They are briefly summarized here to illustrate the principles underlying the data reported and summarized.

Some of the NSSO rounds report both quantity and expenditure data for cereal grains (and in some cases for other items also). Thus prices by round by expenditure class for urban and rural India (and by state) for cereals can be obtained. These prices enable the computation of three types of adjustment factors:

1) Expenditure class adjustment factors showing different prices paid by expenditure class. As Appendix 2 shows, the lower expenditure classes pay lower prices than the higher expenditure classes in all commodities where price data can be obtained. It is sometimes argued that these price differences reflect "quality" differences in the commodity. In the absence of direct evidence for quality differences, however, it is more prudent to regard these differences as real.

2) An adjustment for differences in NSSO and wholesale prices. Many studies deflate the NSSO expenditure data by the wholesale price index for the same period (usually 12 months) to obtain estimates of real expenditures over time. Yet NSSO prices generally do not "match" wholesale prices. For various reasons the NSSO "timing" may differ from the wholesale price timing. Comparisons of actual NSSO and actual wholesale prices enables an adjustment.

3) An adjustment for rural-urban and state differences. Actual prices differ greatly between rural and urban areas and between states. NSSO data allow an adjustment.

The price adjustments made enable the deflation of expenditures data for each expenditure class in each state such that when real expenditure are divided by actual base period prices (wholesale prices), actual quantities are reproduced. Thus for those commodities for which quantities are reported the real expenditure series is a real quantity series. Other commodities are treated proportionately to those for which quantities exist.

The expenditure decile methodology (detailed in Appendix 2) entails estimating the Lorenz curve of expenditures for each survey from nominal expenditure class data. Decile data can then be computed from this curve.

2. Average per Capita Consumption

Figures 1 and 2 summarize graphically average per capita consumption data for rural and urban India from 1952 to 1983. Appendix 4 reports actual data. Recall that while these data are reported in terms of real expenditures in 1970-71 rupees per month, the cereal and foodgrain data are effectively real quantity data given the price deflation procedures used.

It is quite obvious that total per capita consumption expenditures declined substantially from 1952 to 1972 in both rural and urban India. The magnitude of this decline was roughly 25 percent in both rural and urban areas. From the late 1960s to 1983 this decline clearly ended and showed a slight reversal - particularly in urban areas.

Food consumption also showed a decline for the same periods, although the decrease was slightly less pronounced (roughly 20 percent). After 1970 or so urban food consumption rose. Foodgrains consumption shows a less marked decline than does total food consumption. For rural areas, foodgrains consumption appears to have declined in the early 1950s, increased in the early 1960s, and then declined again in the late 1960s. The consumption of pulses has declined in recent years while the consumption of milk has risen slightly.

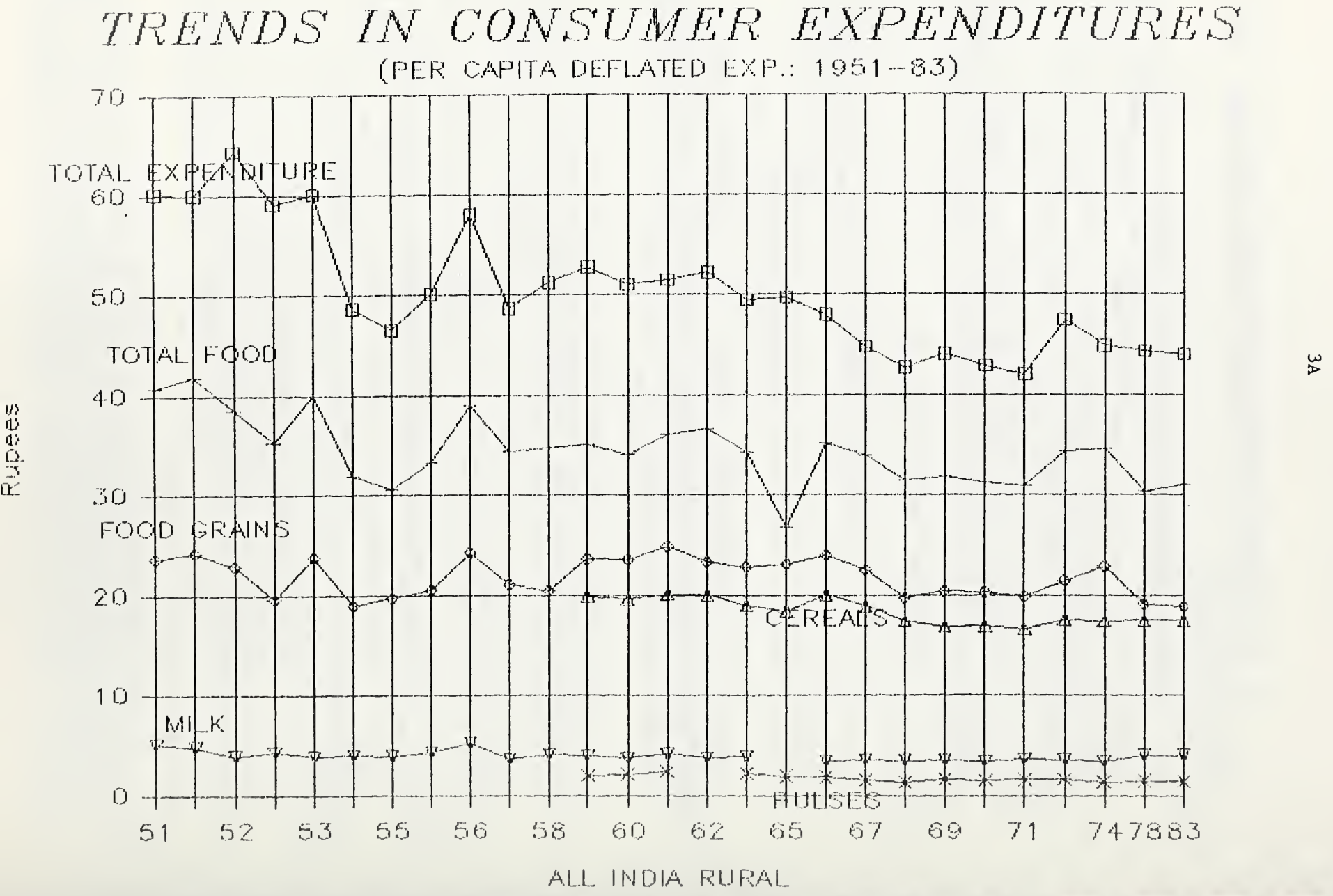
In summary, average per capita consumption of all goods and of foods declined substantially from the early 1950s to the late 1960s. During the 1970s and 1980s this decline was arrested. There is evidence of a rise in nonfood consumption in rural areas and of food consumption in urban areas in recent years.

3. Per Capita Consumption by Expenditure Decile

While changes in average consumption are of interest they do not tell us how the poorest groups in the economy are faring. Decile estimates of consumption can provide this evidence. Figures 3 and 4 show decile estimates for total per capita consumption.

The per capita consumption of the 1st, 2nd, 3rd, 5th, 7th and 9th deciles are shown on these figures over time. It is clear from these data that the poorest families in India have fared differently from the highest income families. The lowest deciles, while obviously having lower consumption, did

Figure 1


TRENDS IN CONSUMER EXPENDITURES
(PER CAPITA DEFLATED EXP.: 1951-83)
TOTAL EXPENDITURE
TOTAL FOOD
FOOD GRAINS
CEREALS
PULSES
MILK
Rupees
70
60
50
40
30
20
10
0
51
52
53
55
56
58
60
62
65
67
69
71
747883
ALL INDIA RURAL

TRENDS IN CONSUMER EXPENDITURES

(PER CAPITA DEFLATED EXP.: 1955–83)

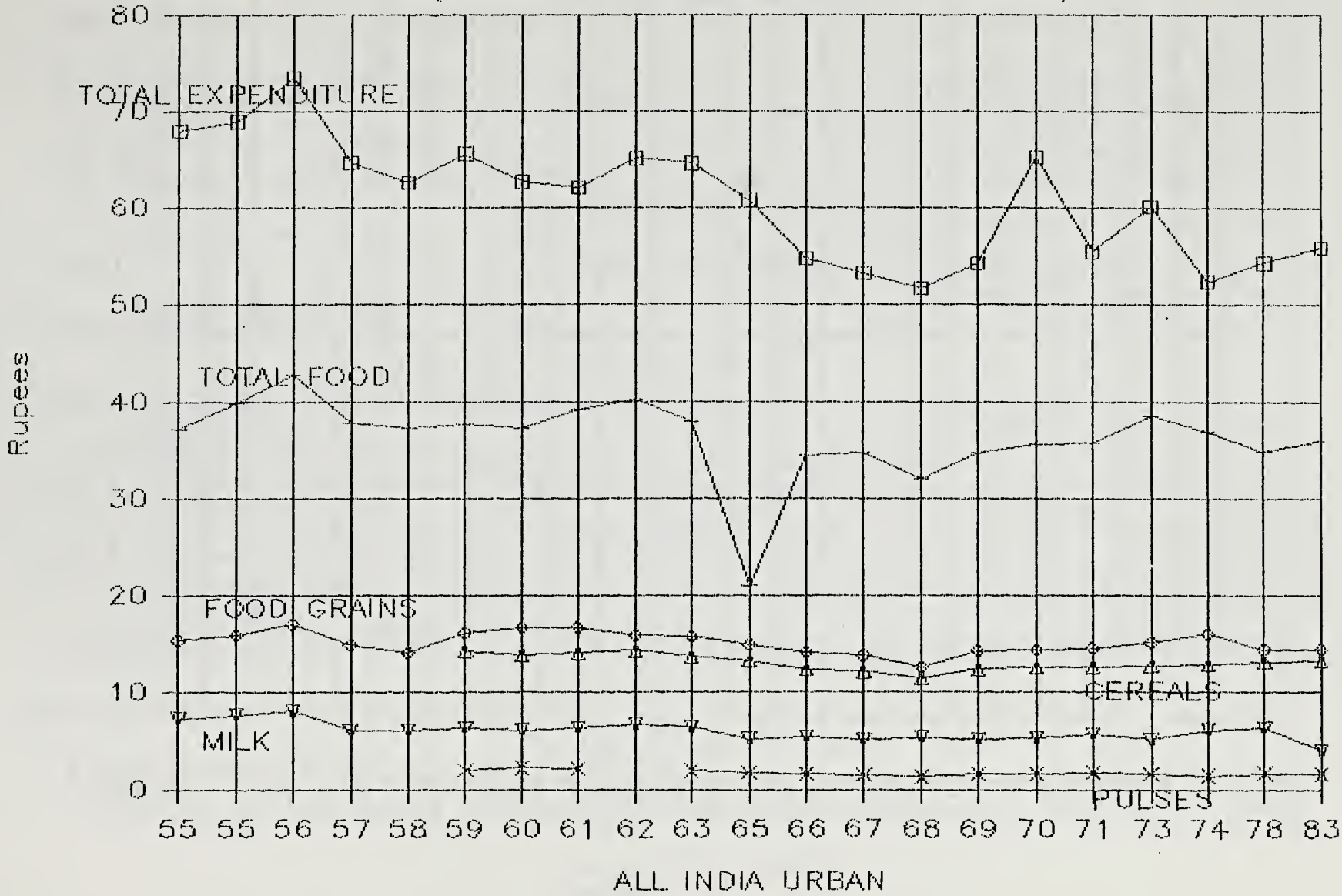
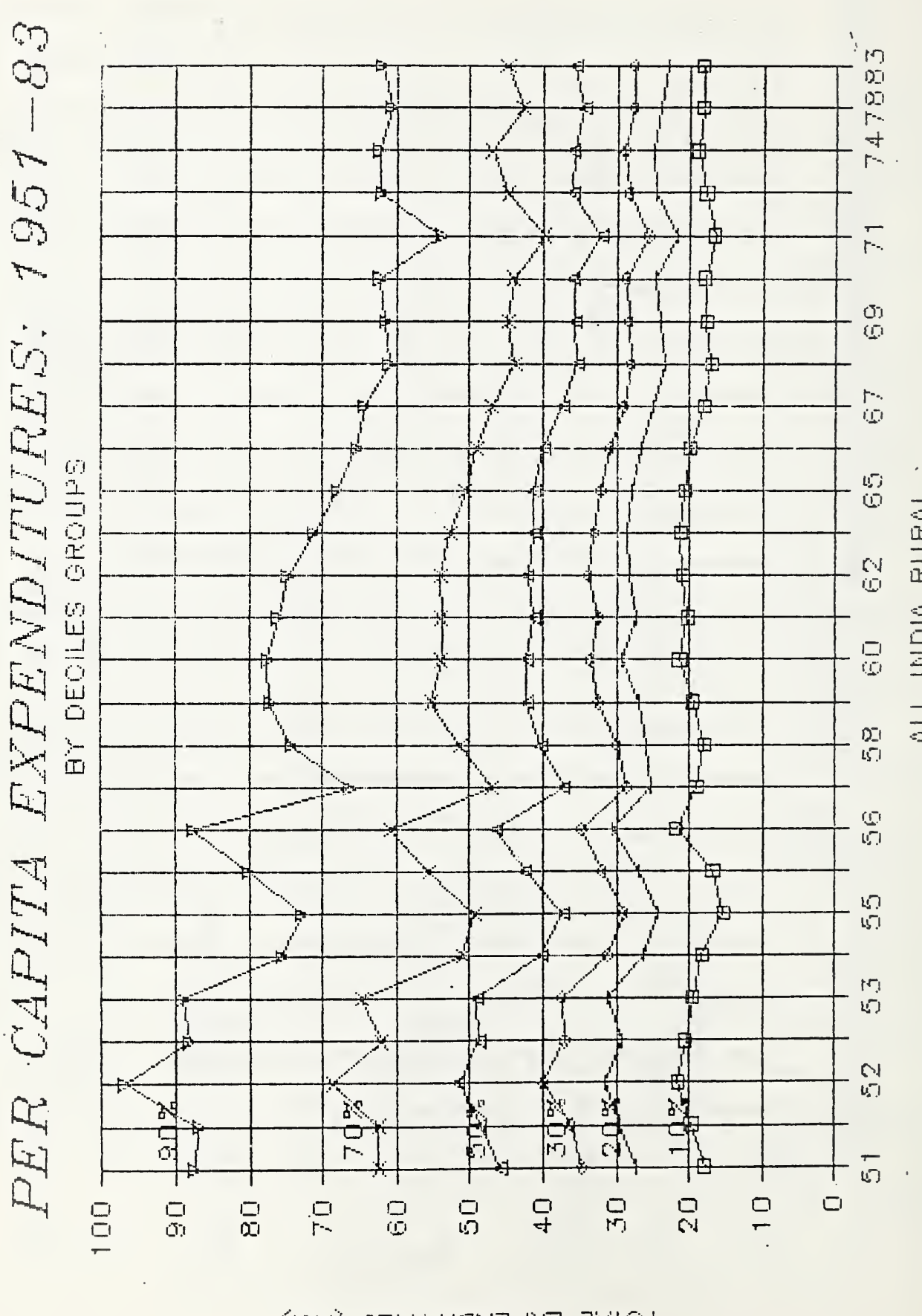
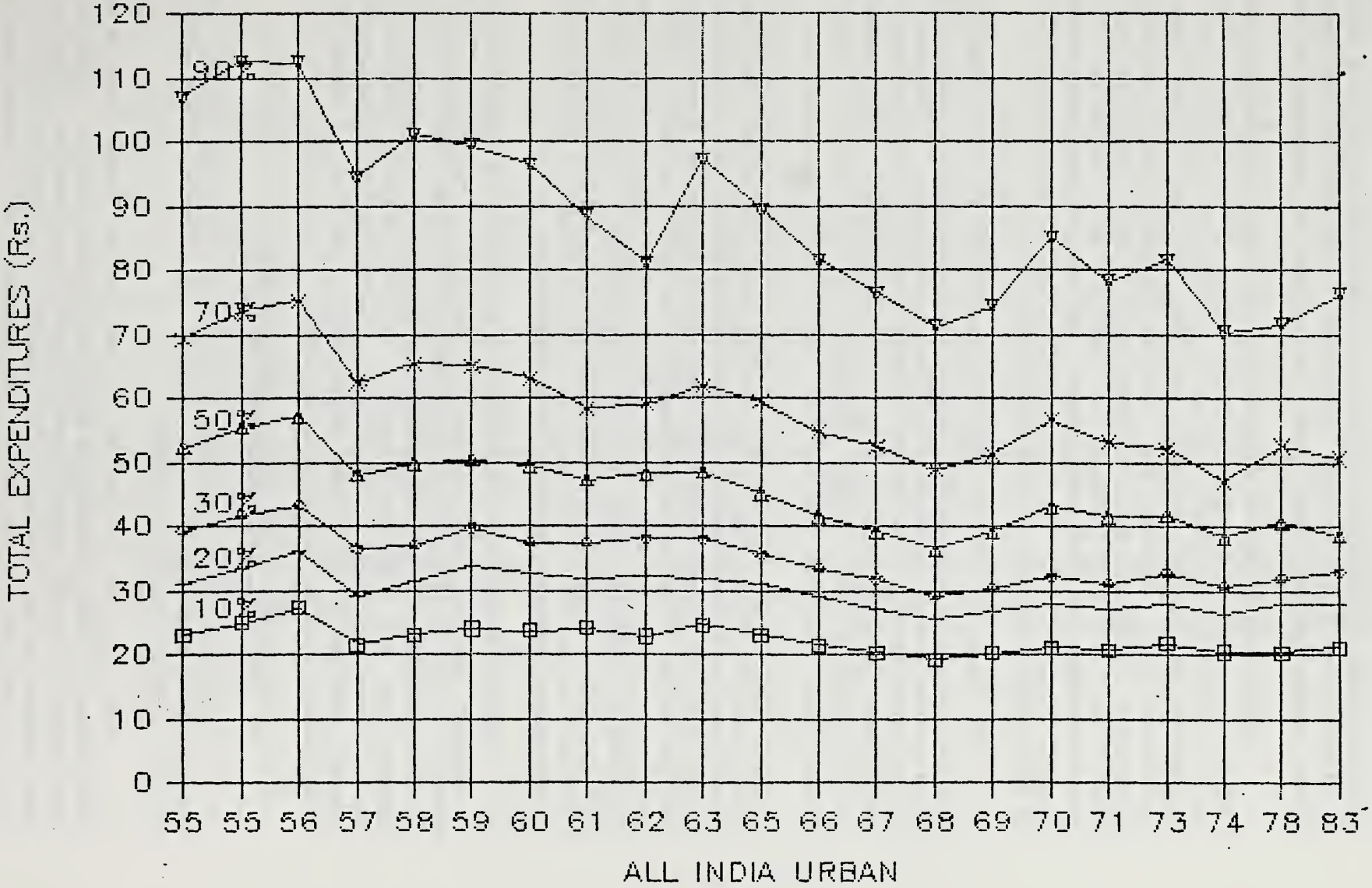


Figure 3


PER CAPITA EXPENDITURES: 1951-83
BY DECILES GROUPS
ALL INDIA RURAL
TOTAL EXPENDITURES (Rs.)
100
90
80
70
60
50
40
30
20
10
0
51
52
53
55
56
58
60
62
65
67
69
71
747883
90%
70%
50%
30%
20%
10%

PER CAPITA EXPENDITURES: 1955–83

BY DECILES GROUPS



not experience significant declines in consumption during the periods of decline in average per capita consumption. This decline was experienced by the higher income deciles, leading to a convergence of consumption levels.

During the 1970s and early 1980s the overall decline in consumption was stopped and possibly reversed in urban areas. It was also a period when the trend toward convergence of consumption levels was discontinued. Total consumption by the poorest decile has risen slightly in both rural and urban areas since 1970. This is also true for the second and third deciles. Consumption by the poorest decile is only slightly lower in rural areas than in urban areas. Since our concern is focused on food consumption of the poor we wish to examine the food consumption component of total expenditures. This is shown in Figures 5 and 6. (Note that the fractile groups are defined in terms of total expenditures not food expenditures).

The same pattern of convergence reflected in total consumption is also reflected in food consumption. Until the late 1960s the higher expenditure deciles experienced a reduction in food consumption. In the rural areas the lowest three deciles experienced an actual rise in food consumption until the early 1960s followed by a decline in the late 1960s. Food consumption for the lowest deciles showed a slight increase in both rural and urban areas from the late 1960s to 1974 and slight declines since then.

Figures 7 and 8 show the fractile analysis for foodgrains consumption. These data show relatively little convergence over time. They show that the lowest decile in rural areas increased their foodgrains consumption during the 1950s, then the lowest decile in both rural and urban areas experienced a decline in the 1960s and an increase in the 1970s and early 1980s. Thus the poor fared relatively well in the 1950s even though the higher deciles experienced declining total and food consumption. During the 1960s they suffered declining food consumption as did the higher deciles. During the 1970s and early 1980s they experienced an increase in foodgrains consumption and a slight increase in total food consumption.

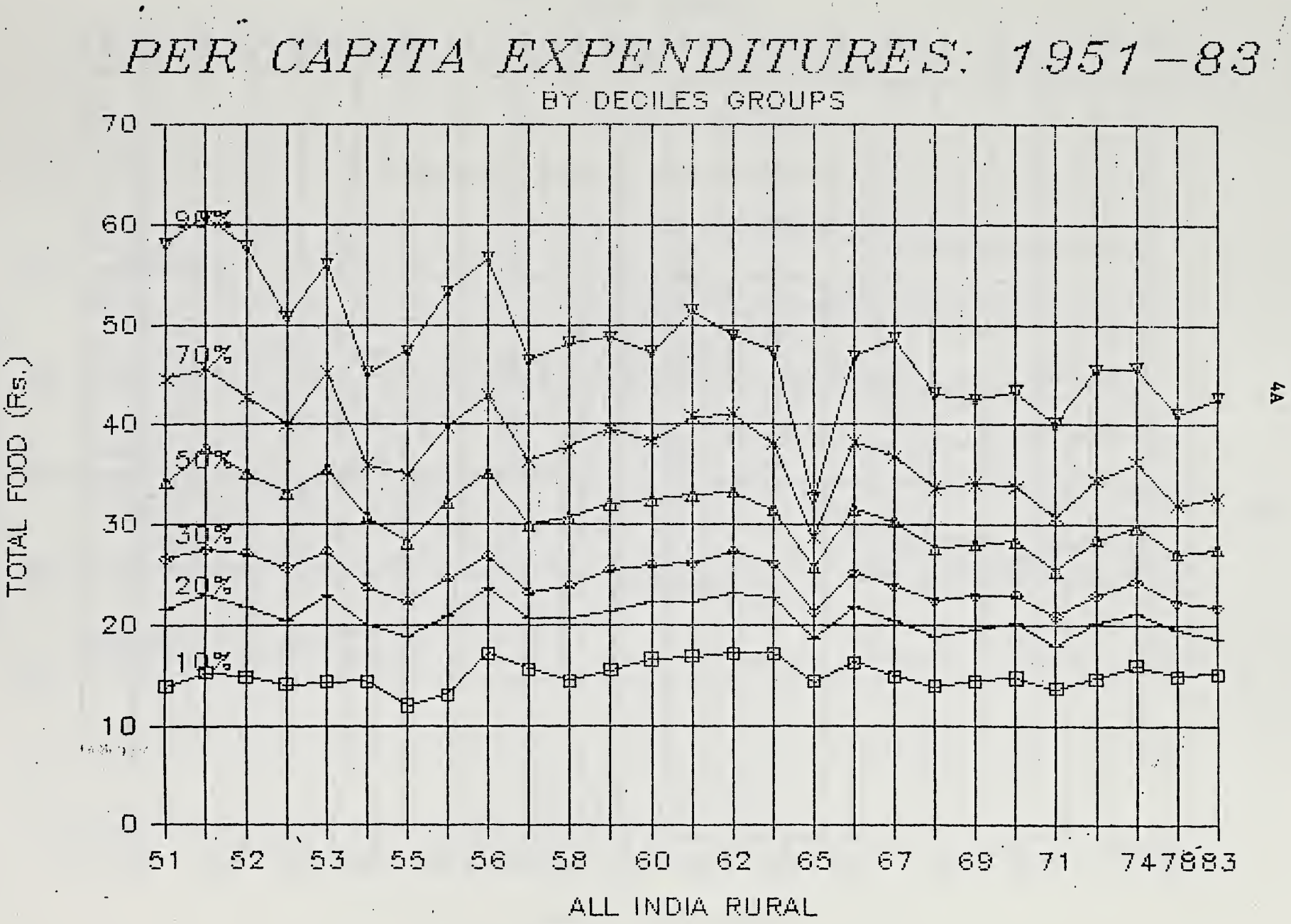
Figures 9 and 10 are designed to show both the degree of disparity in consumption and the change in this disparity or inequality. The ratio of consumption of the 9th decile to consumption of the second decile is shown for total consumption, food consumption and foodgrains consumption. It is readily apparent that the degree of disparity in consumption is greatest in total expenditures and lowest in foodgrains and that it has fallen more in total expenditures and in total food consumption. The current disparity in consumption, even of foodgrains, is large.

4. Nutrient Intake by Expenditure Decile

I now turn to an analysis of nutrient intake by decile. The foods consumed were converted to daily caloric and protein intake using coefficients noted in the methodology appendix.

Before turning to the calorie and protein intake data, a more detailed examination of food consumption data may be instructive. Figures 11 and 12 show changes in wheat consumption by expenditure decile. Figures 13 and 14 show changes in the consumption of pulses by expenditure decile. The rise in wheat consumption and the fall in the consumption of pulses have been the major

Figure 5


PER CAPITA EXPENDITURES: 1951–83
BY DECILES GROUPS
TOTAL FOOD (Rs.)
70
60
50
40
30
20
10
0
90%
70%
50%
30%
20%
10%
51
52
53
55
56
58
60
62
65
67
69
71
74
78
83
ALL INDIA RURAL

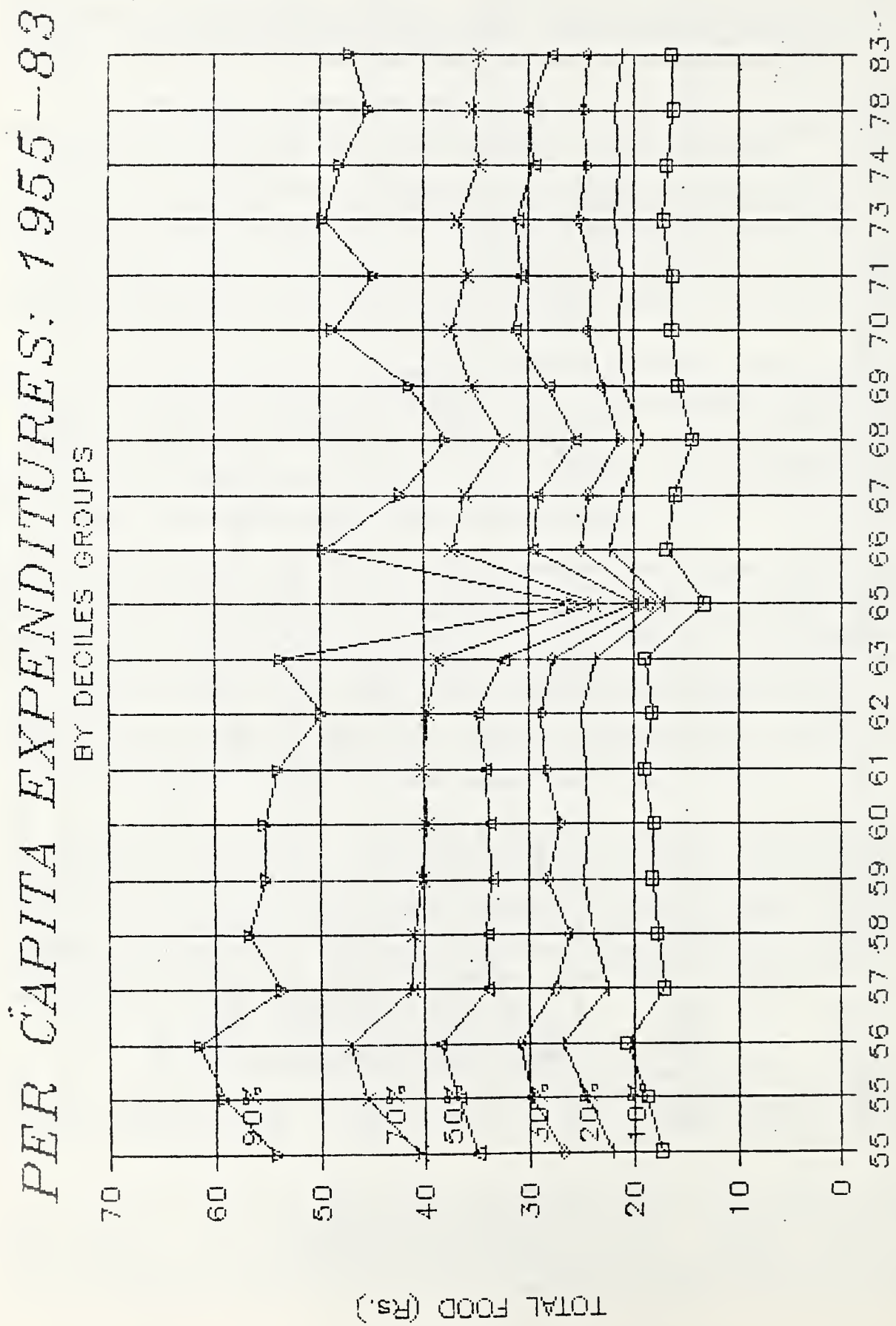

PER CAPITA EXPENDITURES: 1955-83
BY DECILES GROUPS
ALL INDIA URBAN
TOTAL FOOD (Rs.)
70
60
50
40
30
20
10
0
90%
70%
50%
30%
20%
10%
55 55 56 57 58 59 60 61 62 63 65 66 67 68 69 70 71 73 74 78 83

Figure 6

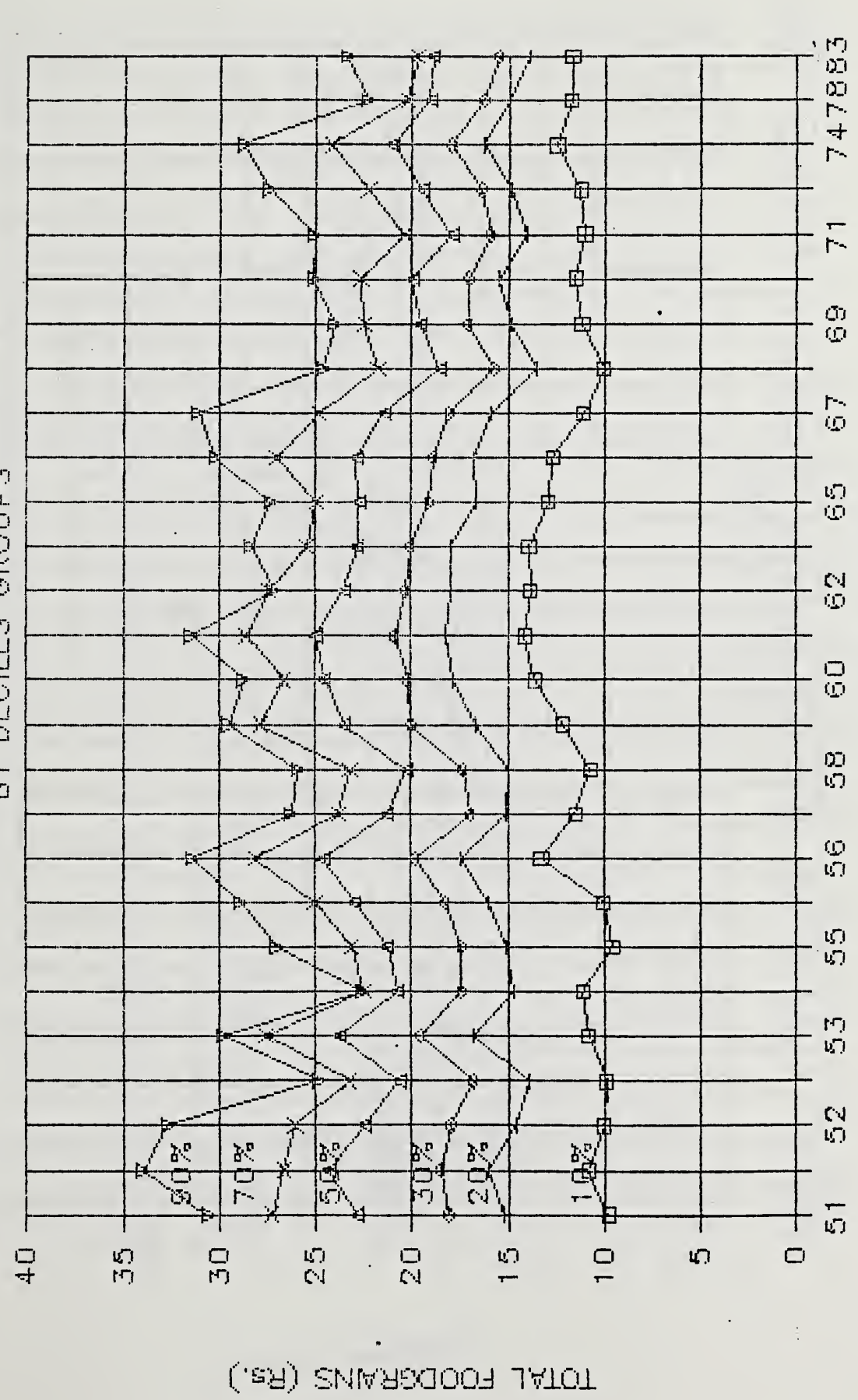

PER CAPITA EXPENDITURES: 1951–83
BY DECILES GROUPS
ALL INDIA RURAL
TOTAL FOODGRAINS (Rs.)
40
35
30
25
20
15
10
5
0
51
52
53
55
56
58
60
62
65
67
69
71
747883
90%
70%
50%
30%
20%
10%

Figure 7

Figure 8

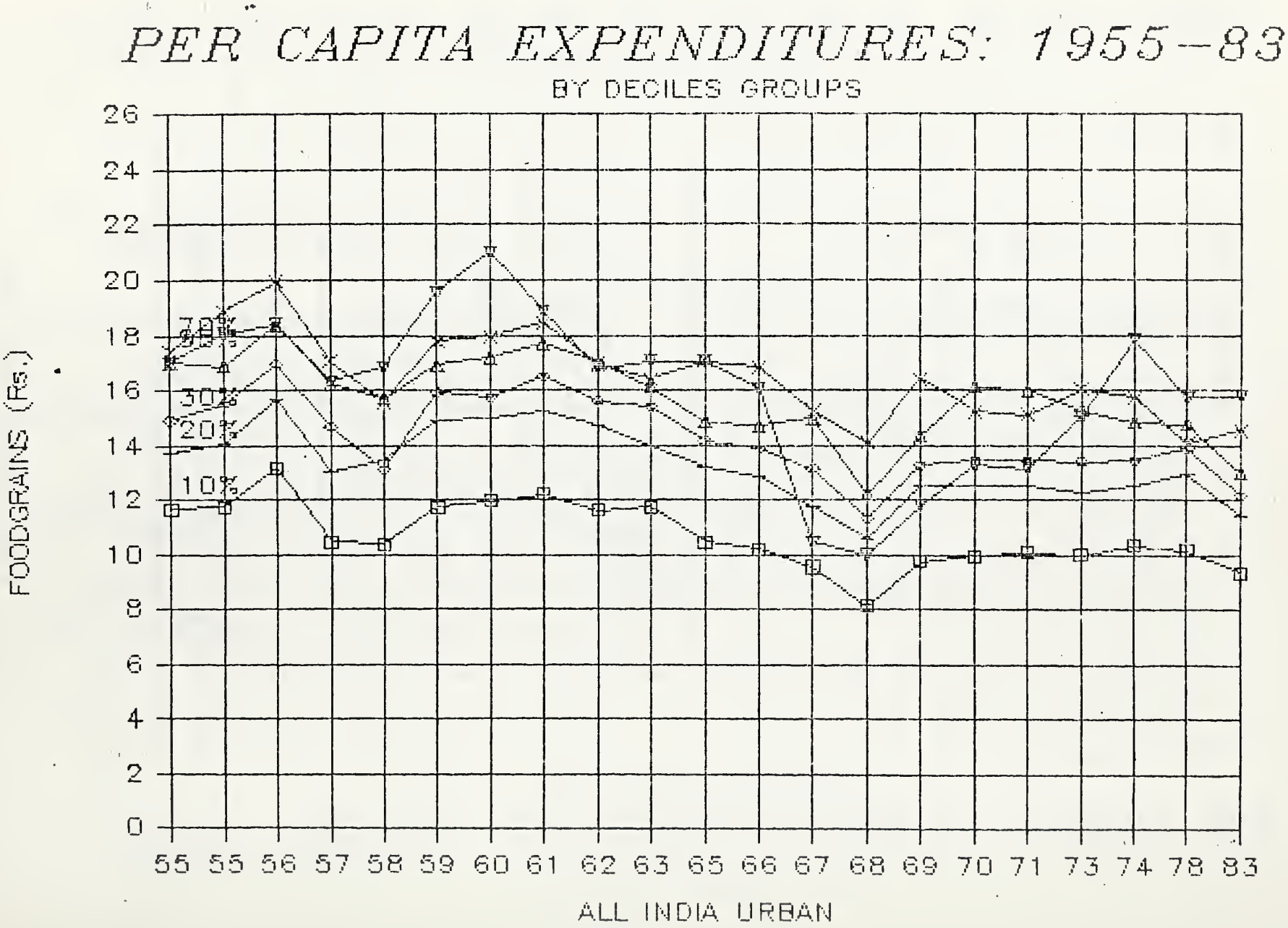

PER CAPITA EXPENDITURES: 1955-83
BY DECILES GROUPS
FOODGRAINS (Rs.)
26
24
22
20
18
16
14
12
10
8
6
4
2
0
70%
30%
20%
10%
55 55 56 57 58 59 60 61 62 63 65 66 67 68 69 70 71 73 74 78 83
ALL INDIA URBAN

Figure 9

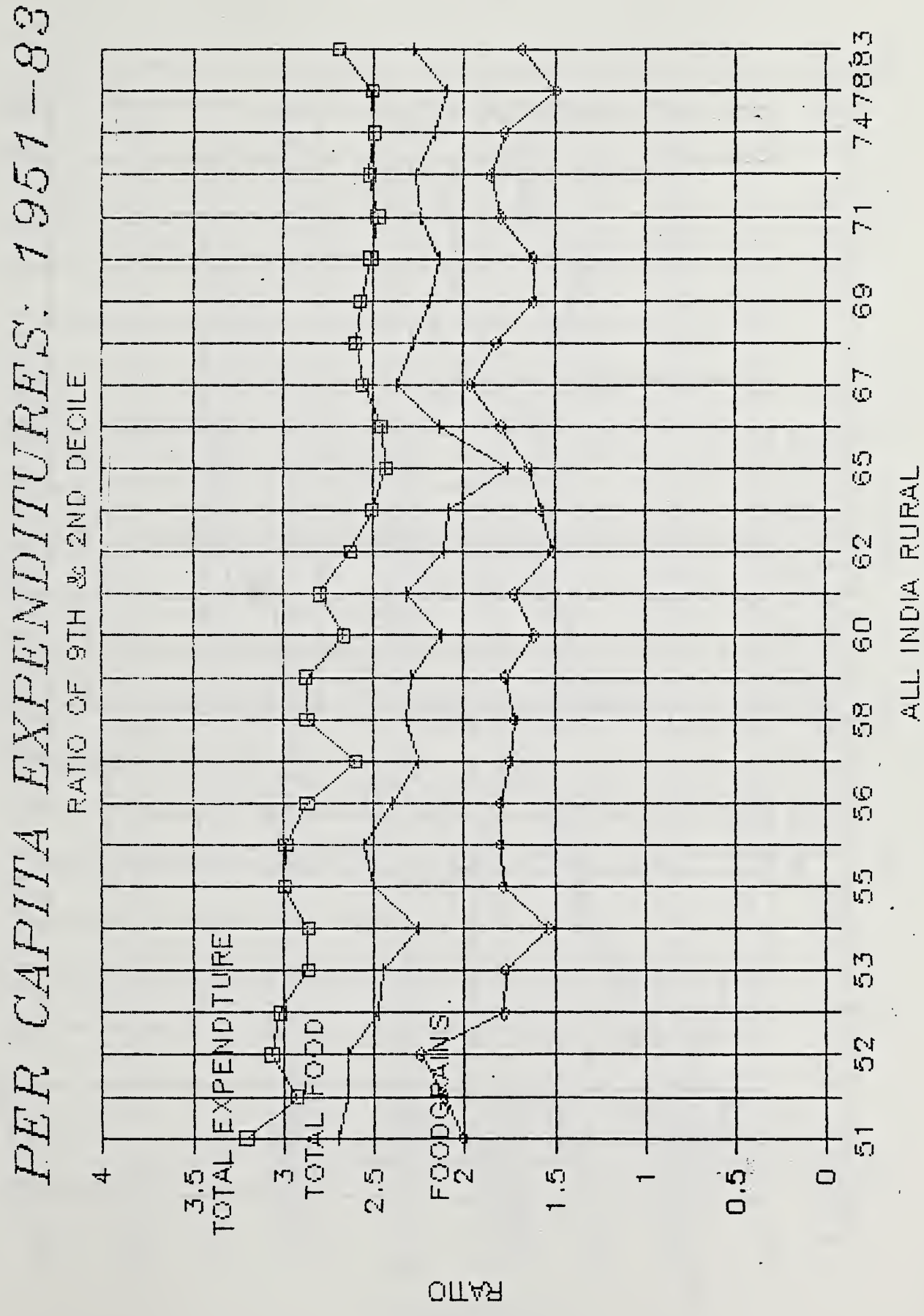
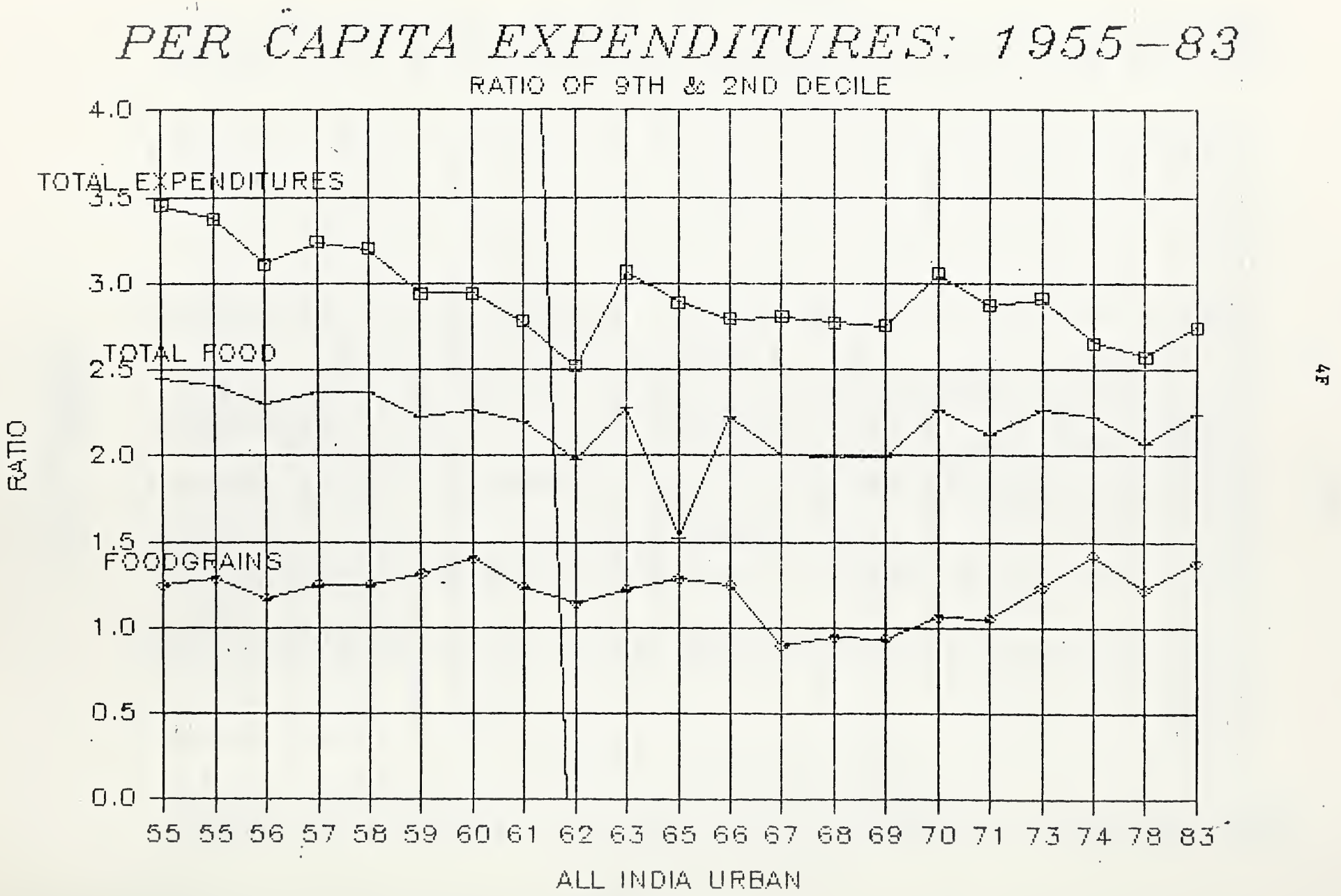

PER CAPITA EXPENDITURES: 1951-83
RATIO OF 9TH & 2ND DECILE
TOTAL EXPENDITURE
TOTAL FOOD
FOODGRAINS
RATIO
4
3.5
3
2.5
2
1.5
1
0.5
0
51 52 53 55 56 58 60 62 65 67 69 71 74 78 83
ALL INDIA RURAL

Figure 10


PER CAPITA EXPENDITURES: 1955-83
RATIO OF 9TH & 2ND DECILE
TOTAL EXPENDITURES
TOTAL FOOD
FOODGRAINS
RATIO
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
55 55 56 57 58 59 60 61 62 63 65 66 67 68 69 70 71 73 74 78 83
ALL INDIA URBAN

PER CAPITA EXPENDITURES: 1959–83

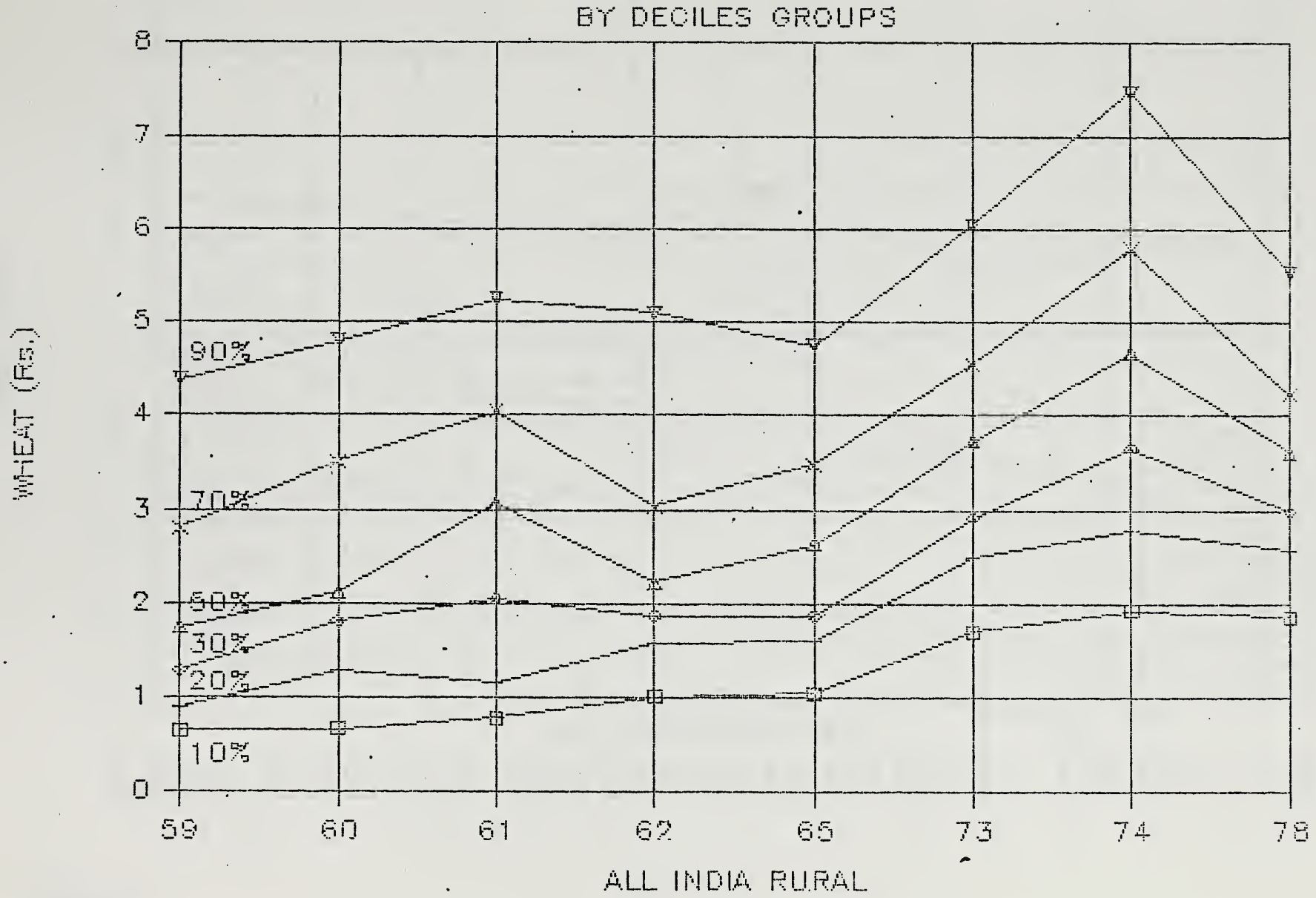
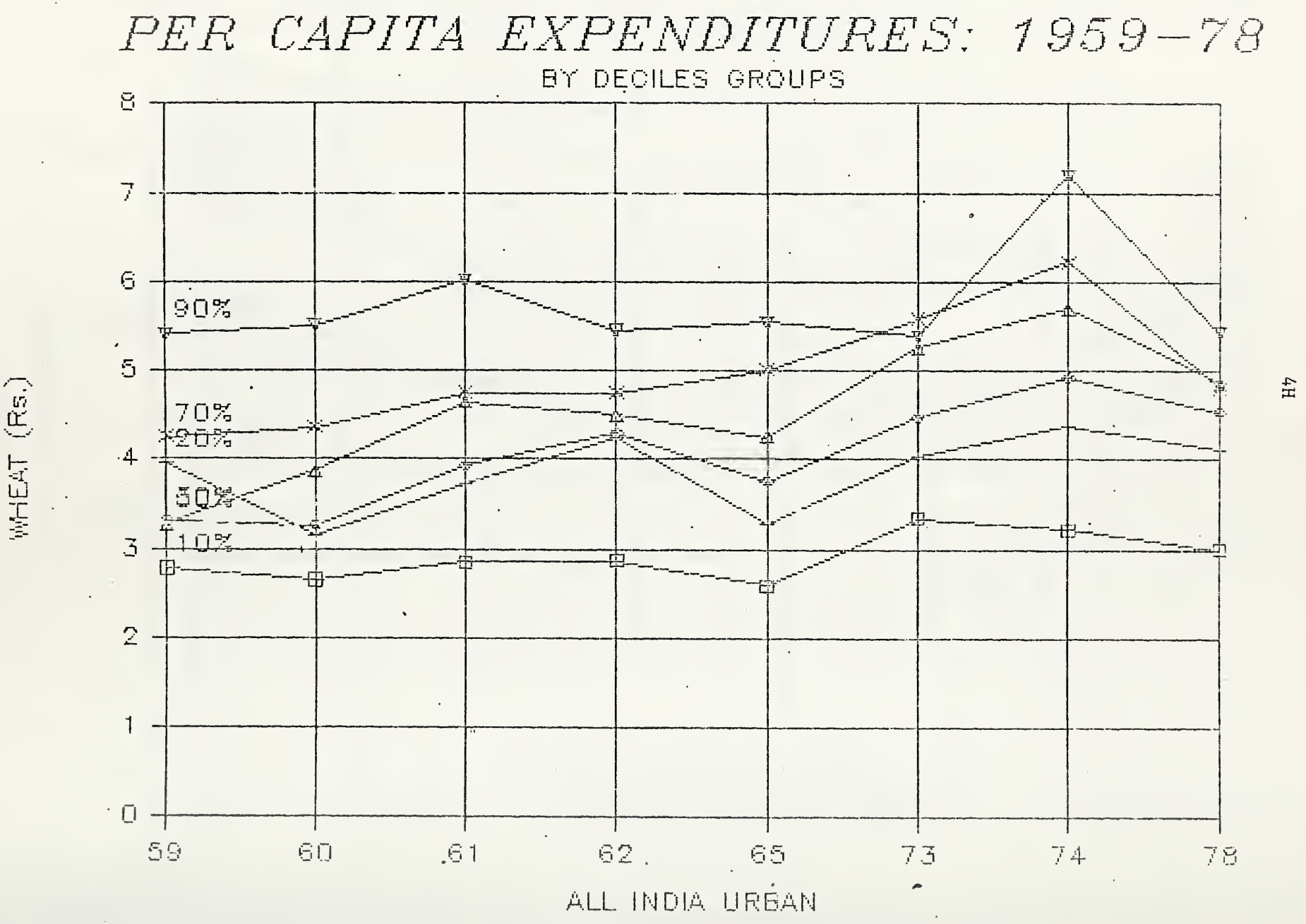


FIGURE 12


PER CAPITA EXPENDITURES: 1959–78
BY DECILES GROUPS
WHEAT (Rs.)
8
7
6
5
4
3
2
1
0
90%
70%
50%
10%
59
60
61
62
65
73
74
78
ALL INDIA URBAN

PER CAPITA EXPENDITURES: 1959–83

BY DECILES GROUPS

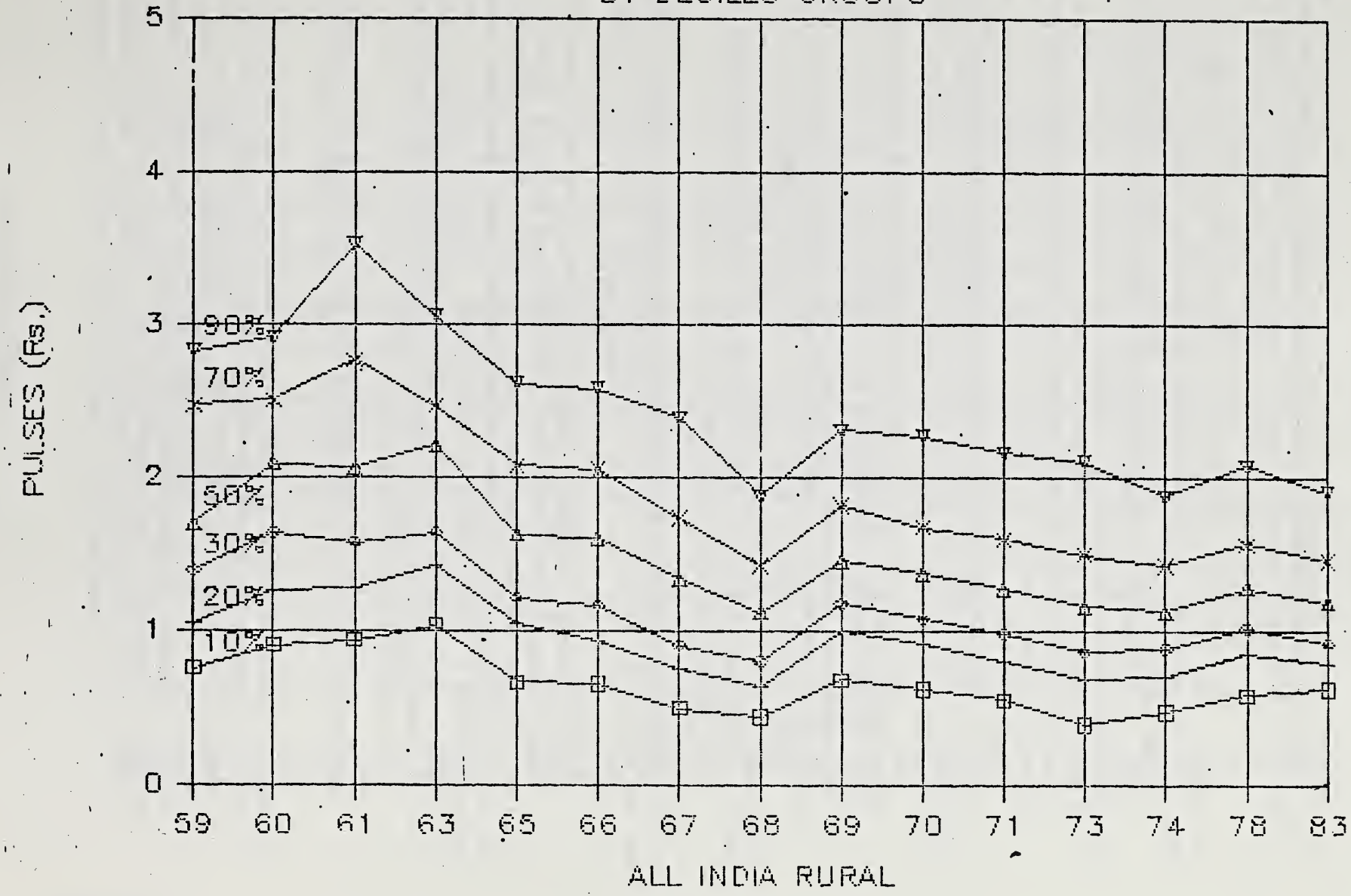
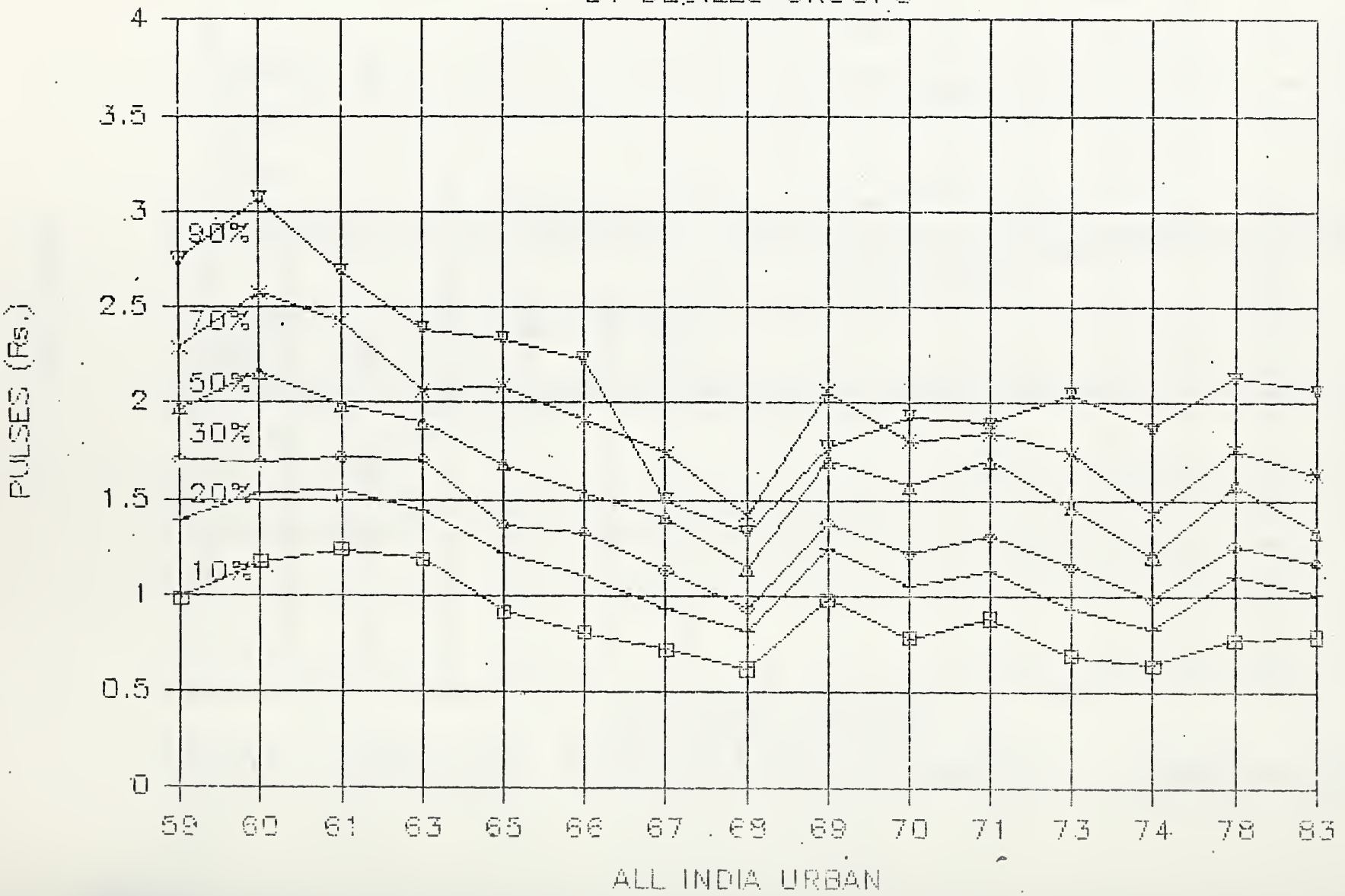


FIGURE 14

PER CAPITA EXPENDITURES: 1959–83

BY DECILES GROUPS



changes in the diet in India in recent years. Figures 11 and 12 show that much of the rise in wheat consumption occurred in the 1965-74 period and that all deciles increased their consumption of wheat. Figures 13 and 14 show that most of the decline in pulses consumption had taken place by 1968.

Figures 15 and 16 display per capita decile energy intake. They show a large disparity between the first and second deciles. The data for the lowest decile class indicate severe calorie deficiency. In rural India, calorie levels for the lowest deciles increased from very low levels in the early 1950s. These gains were lost in the 1960s, but calorie intake levels improved slightly for the rural poor in the 1970s and the 1980s. The urban poor had higher calorie intake levels than the rural poor in the 1950s. During the decline in the 1960s they lost this advantage, and since they experienced smaller gains in the 1970s and 1980s, they have poorer diets at present. Average calorie levels for the rural areas have been higher than average calorie levels for the urban areas. Much of this difference is in the higher expenditure deciles. This may reflect differences in work and energy output.

The Indian Council of Medical Research (ICMR) has established a per capita level of 2150 kcals per day as a recommended adequate level. While there is some controversy over what range of intakes might be considered adequate, no observer would suggest that the levels of intake by the lowest decile could be considered adequate. If we take the ICMR level as the standard, we find that the lowest two deciles in rural areas did not meet this standard at any time and that the 3rd decile met it only in the 1960s. Since 1970 or so the lowest 4 deciles have had inadequate energy intake.

The situation for the urban population is more severe. Only the 9th and 10th decile show clear adequacy of energy intake. Even the 7th decile has been below the ICMR standard in recent years.

Figures 17 and 18 show protein intake by decile. These data show similar patterns to those for calories. The lowest income groups have deficient protein intake, although protein adequacy measured relative to the recommended daily allowance (45.2 grams of protein) is clearly better for the poor than is calorie adequacy. About 10% of the population in rural areas and 30% of the population in urban areas have protein deficient diets. Since inadequacy of calorie intake leads to the conversion of protein into calories, severe calorie deficiency will result in protein deficiency as well.

Appendix 4 reports data on the percentages of protein derived from cereals and pulses (Tables 157-184).

The protein intake obtained from cereals is over 90% is for the lowest decile and 60% for the upper decile. The ratio of protein intake from pulses to cereals (amino acid adequacy) is a critical factor in the retention of cereal protein as proteins. The recommended level of this ratio is 20 to 25% of total protein from pulses. About 60% of the population in rural India was below this level prior to 1963. The percentage later increased to over 90. In urban areas only 10% were deficient in intake of pulses in the early 1950s, this increased to 30% in the late 1950s and to 40% thereafter.

FIGURE 15

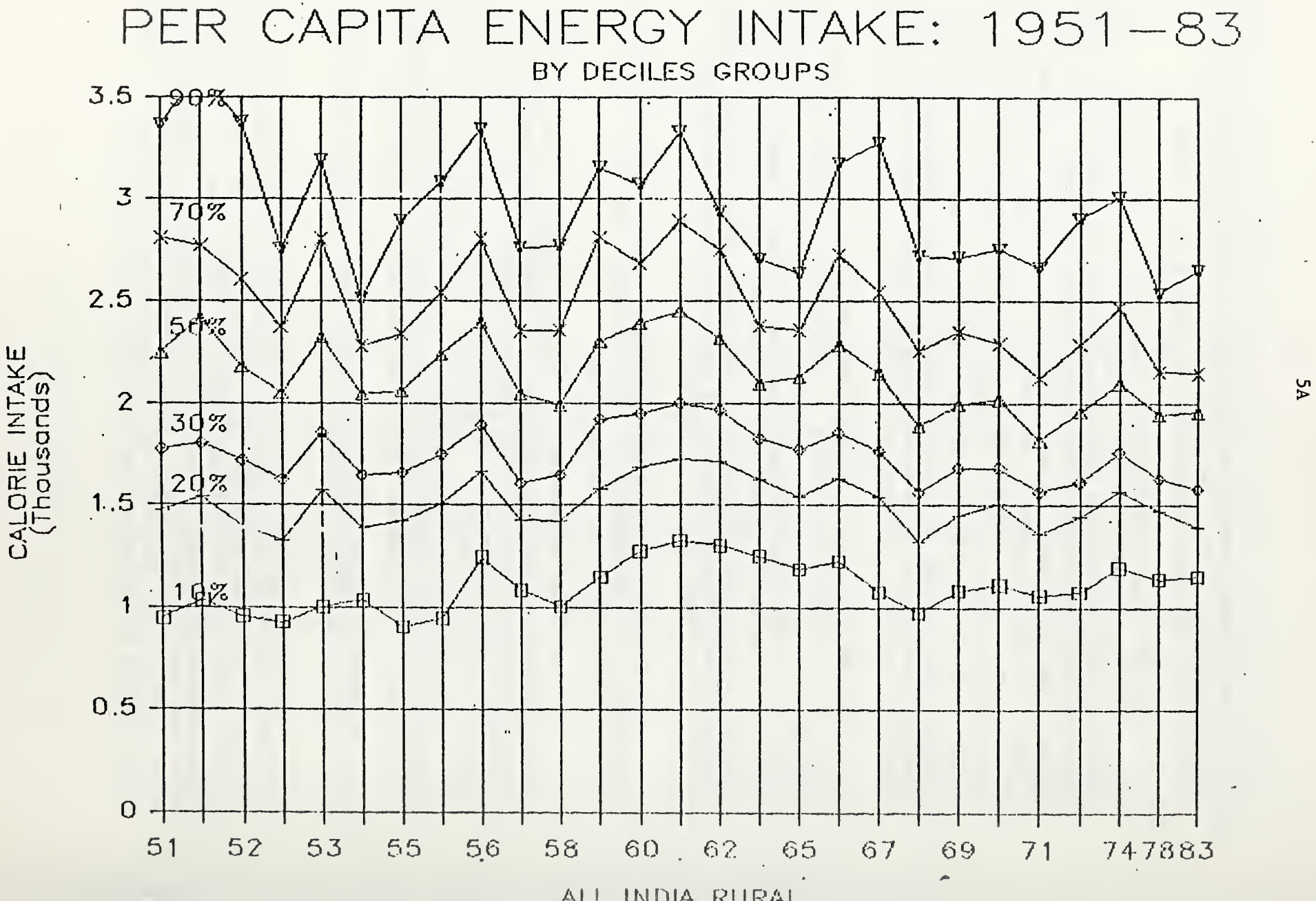

PER CAPITA ENERGY INTAKE: 1951–83
BY DECILES GROUPS
CALORIE INTAKE (Thousands)
3.5
3
2.5
2
1.5
1
0.5
0
90%
70%
50%
30%
20%
10%
51
52
53
55
56
58
60
62
65
67
69
71
74
78
83
ALL INDIA RURAL

FIGURE 16

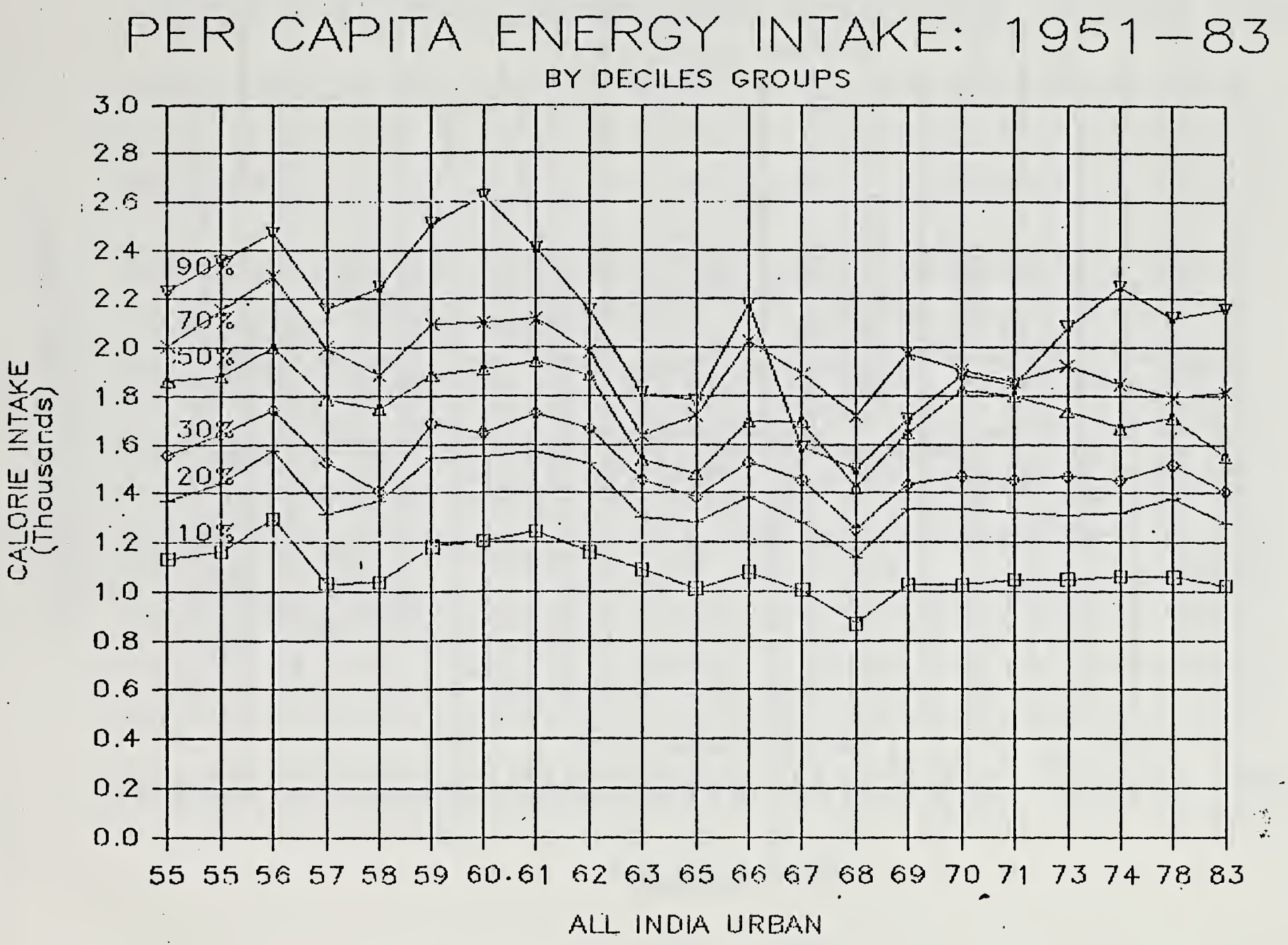

PER CAPITA ENERGY INTAKE: 1951–83
BY DECILES GROUPS
CALORIE INTAKE (Thousands)
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
90%
70%
50%
30%
20%
10%
55 55 56 57 58 59 60.61 62 63 65 66 67 68 69 70 71 73 74 78 83
ALL INDIA URBAN

Figure 17

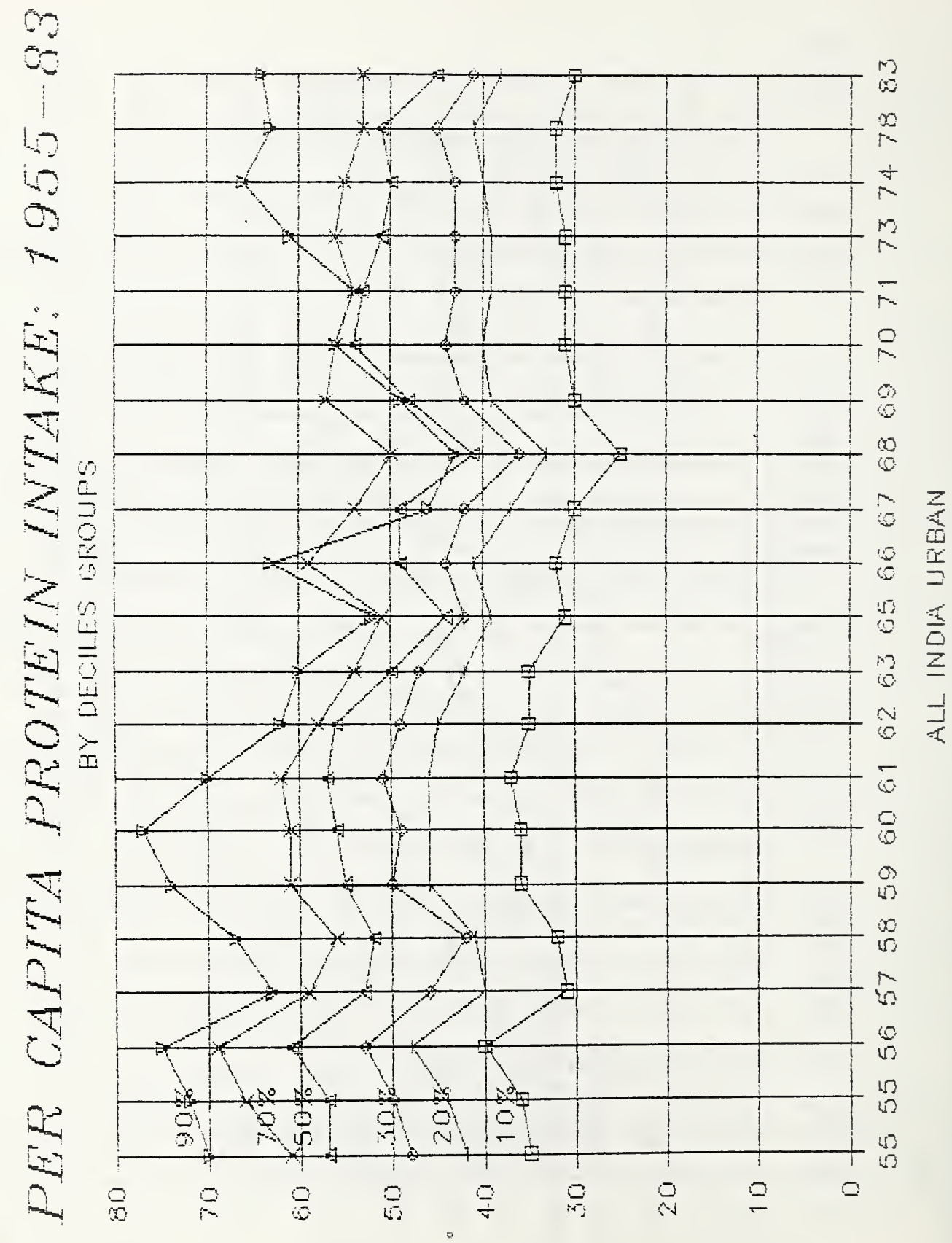
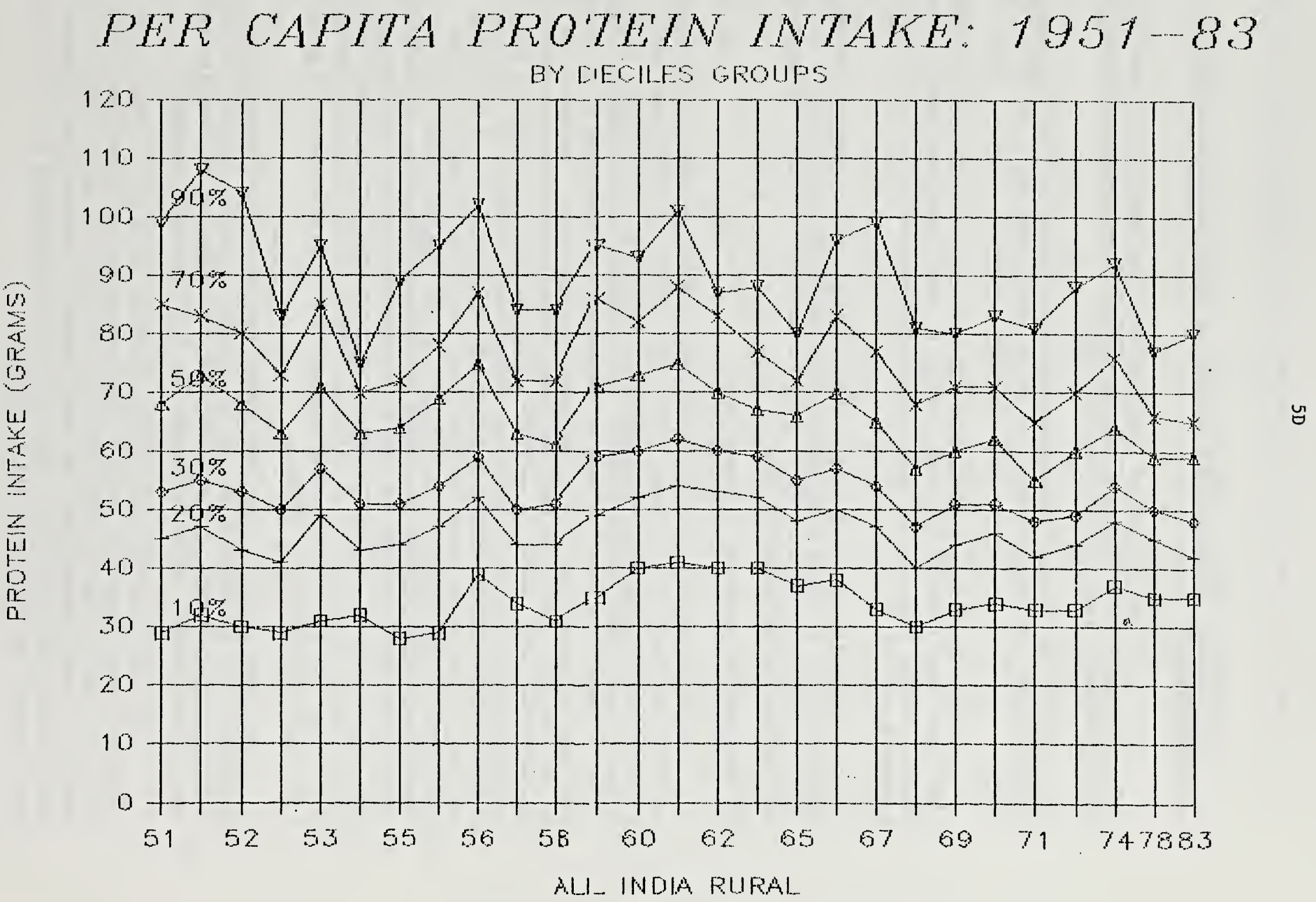

PER CAPITA PROTEIN INTAKE: 1955-83
BY DECILES GROUPS
ALL INDIA URBAN
PROTEIN INTAKE (GRAMS)
90%
70%
50%
30%
20%
10%
80
70
60
50
40
30
20
10
0
55 55 56 57 58 59 60 61 62 63 65 66 67 68 69 70 71 73 74 78 83

Figure 18


PER CAPITA PROTEIN INTAKE: 1951-83
BY DECILES GROUPS
PROTEIN INTAKE (GRAMS)
120
110
100
90
80
70
60
50
40
30
20
10
0
90%
70%
50%
30%
20%
10%
51
52
53
55
56
58
60
62
65
67
69
71
74
78
83
ALL INDIA RURAL

The dietary situation with respect to other prescribed criteria is as outlined below:

(i) The proportion of energy derived from cereals is above 75% for 90% of the rural population and for about 55% of the urban population. The ICMR recommended level is not more than 75%.

(ii) The energy intake from oil is far below the ICMR recommended limits of 15%. It ranks around 2 to 5% in rural areas and 4 to 12% in urban areas.

(iii) The energy derived from sugar is less than 5% (the prescribed ICMR upper limit) for 90.4% of the people in rural areas and 30% in urban areas. For the upper 70% of the people in urban areas this proportion is between 6 and 10%.

(iv) Data indicate a very poor intake of milk. None of the decile groups in rural or urban areas show a milk intake of over 100 ml. a day (the ICMR recommended minimum level). Even for the upper deciles, the milk intake per capita per day is around 40 ml.

B. Comparative Trends in the NNMB Data

The National Nutrition Monitoring Board has reported data at the state and district level for the years 1974, 1976, 1978, 1979, 1980 and 1982. The states covered are Kerala, Andhra Pradesh, Karnataka, Maharashtra, Orissa, Gujarat, Tomil Nadu, Madhya Pradesh, Uttar Pradesh and West Bengal. Tables 1, 2, and 3 report the means by year of these data obtained from 9 or 10 states with samples drawn from 3 to 4 districts in each state. The means are affected by the choice of districts to be sampled and may reflect some measurement biases as well. In order to more accurately assess time trends in these data, regressions were run with time as an independent variable. In addition state dummy variables, dummy variables for the development level of districts included in the state survey for the year, the ratio of rural to urban households in the sample and an estimate of the average income level of the state sample were included to control for systematic sampling and measurement errors. The tables report the coefficient estimate on the time variable and its "t" statistic. The reader should interpret this "t" with some caution. I would suggest viewing a "t" of less than 1.4 or 1.5 as indicating no trend, a "t" between 1.4 and 2 as strongly suggestive of a trend, and a "t" greater than 2 as strong evidence of a trend.

The NNMB data fall into 3 classes. Table 1 reports data on food consumption per consuming unit per day. Table 2 reports nutrient intake per consuming unit per day. Table 3, which is certainly the most interesting, reports nutritional status indicators for the households surveyed.

Consider first the food consumption data in Table 1. These data indicate a strong negative trend in the consumption of pulses (as do NSSO data), an upward trend in leafy vegetables consumption and a possible downward trend in oilseed consumption. No other trends of interest are indicated. The reader should note that since these data are not available for 1974, there are very few years in which to identify trends.

Table 1: Food Consumption Data NNMB:Means by Year and Time Trend Analysis

	1976	1978	1979	1980	1982	Estimated Time Trend	"t"
Cereals	507.2	533.5	521.6	532.5	497.6	-4.69	0.89
Pulses	43.4	35.9	37.3	33.4	29.7	-4.01	3.20
Leafy Veg.	11.8	13.7	12.5	14.1	22.5	3.19	1.80
Other Veg.	50.9	55.6	58.2	75.1	52.9	-0.73	0.29
Roots & Tubers	60.1	55.3	51.2	119.5	46.5	-6.52	0.78
Nuts/oilseeds	11.8	7.0	8.0	13.6	12.3	-1.24	1.64
Spices	12.8	12.1	13.1	12.8	11.0	-0.31	0.68
Fruits	15.1	19.1	12.6	24.5	20.9	-1.38	0.94
Meat	7.7	7.9	9.0	12.4	9.5	-0.49	0.69
Eggs/Fish	2.6	2.8	3.0	3.3	4.5	0.24	0.71
Milk	102.8	66.1	89.8	88.3	77.9	-2.74	0.62
Fats/oils	10.8	9.0	12.1	9.5	9.8	0.39	0.88
Sugar/Gur	22.1	19.2	23.4	17.5	21.3	1.72	2.0

Table 2: Nutrient Intake:NNMB Data - Means by Year and Estimated Time Trends

Nutrient	1976	1978	1979	1980	1982	Estimated Time Trend	"t"
Protein (g)	65.5	62.6	62.4	62.3	58.7	- 1.77	2.50
Calories(Kcal)	2368	2341	2366	2404	2243	-31.4	1.30
Calcium (mg)	632	543	576	587	588	- 6.2	0.50
Iron (mg)	31.5	31.2	30.3	29.6	30.4	- .09	0.21
Vitamin A (ug)	293	308	270	313	365	20.7	1.10
Thiamine (mg)	1.67	1.50	1.41	1.31	1.34	- .066	2.40
Riboflavin (mg)	1.02	.93	.92	.91	.89	-.021	1.40
Nicotinic acid (mg)	16.6	16.4	15.5	15.38	14.4	-.41	2.10
Vitamin C (mg)	40.7	41.3	79.0	52.1	45.3	1.23	0.67

Table 3: Health and Nutritional Status Indicators: NNMB Data
Means by Year and Estimated Time Trend

	1974	1976	1978	1979	1980	1982	Estimated Time Trend	"t"
Percent Household Deficient in Both Calorie and Protein	9.7	17.3	12.7	13.5	10.4	6.6	-54.2	1.2
Calorie but not Protein	25.8	23.2	33.2	34.6	36.8	29.2	230.5	3.3
Percent Showing No Health Deficiency:								
Infants	88.7	91.0	91.7	96.3	94.6	95.9	.79	1.5
Preschoolers	76.4	81.6	-	82.9	82.9	82.5	-2.79	1.1
Males 5-12	76.8	87.3	-	72.0	68.9	68.4	-4.58	1.9
Females 5-12	76.8	87.3	-	71.9	70.3	73.1	-4.54	1.8
Males 12-21	79.0	73.2	76.3	80.7	73.9	82.1	1.04	1.3
Females 12-21	78.0	76.6	75.6	81.7	80.8	74.1	.68	.74
Percent Showing Moderate Gomez Undernutrition								
Boys 1-5	-	40.1	42.6	39.2	39.3	41.1	-.113	.142
Girls 1-5	-	39.3	27.5	29.7	26.0	26.9	-2.529	2.577
Percent Showing Severe Gomez Undernutrition								
Boys 1-5	-	8.5	9.7	10.0	6.5	6.6	-.046	.087
Girls 1-5	-	8.3	7.1	5.9	3.0	5.7	-.733	1.788
Infant Mortality Rate								
Urban Areas	80	77	72	70	65	57	-2.03	4.7
Rural Areas	118	115	111	109	103	93	-2.23	4.7

Table 2 reports nutrient intake data. These data show a negative trend in protein, thiamine and nicotinic acid intake. This suggests no real improvement and some possible deterioration of the diet. Pralhad Rao and Sastry (1985) report data for 1975 and 1981 (but not 1982) as well as the data sampled here and their data do suggest an improvement in calorie intake from about 2300 calories per day to 2400 calories per day.

Table 3 reports the most interesting data, however. This is because the nutritional status indicators (except for the infant mortality rates) are measured on the same population as the dietary measurement. We do not have comparable data for 1974 on the undernutrition indicators. Table 3 provides some evidence of positive trends in health and nutrition indicators in a population that did not show a positive trend in the quality or quantity of its diet.

The evidence on protein and calorie deficiency indicates that fewer households are classified as both protein and calorie deficient and more households as deficient only in calories. This has occurred even though the data suggest a downward trend in average protein intake. The quality of protein intake has also declined because pulses consumption had declined. The data on health deficiency signs suggest a downward trend in health deficiency signs in the 5-12 year classes. The anthropometric measurement data show trends toward fewer girls being classified as mild or severely undernourished. The infant mortality rates also show clear downward trends for these states. These data were not from the NNMB survey but from other state sources. (These data will be subjected to further analysis in section II.C of this report).

C. Poverty in India

A number of studies of poverty in India have been undertaken (see Appendix 1). Any poverty line has a certain degree of arbitrariness. Perhaps the most reasonable poverty line is based on nutritional consideration. Appendix 2 indicates that an average kilogram of foodgrains contains 3390 calorie units. The price of a unit of foodgrains in 1970-71 prices was 1.27 rupees (Appendix Table 2-5). The average ratio of total consumption expenditures to expenditures on foodgrains was 1.68 for Deciles 3 and 4. Thus if we assume this ratio to hold and that all calories are obtained from foodgrains the monthly per capita expenditure required to meet the ICMR standard of 2150 calories per day would be

$$(1.68 \times 2150 \times 1.27 \times 30)/3390 = ₹40.6$$

Figures 19 and 20 show the proportion of the population with total expenditures below 30, 40 and 52 constant 1970-71 rupees expenditures per capita per month. The 30 rupee level is the level suggested by the Planning Commission. The 40 rupee line is closer to a calorie adequacy line as calculated above. The 52 rupee level is a "generous" level allowing for substantial wastage of food and purchase of a higher quality diet. The Planning commission recommended a higher level for urban than for rural areas. Our price data would also suggest a higher level for adequacy for urban areas. Figure 19 and 20 depict the relevant trends in poverty lines. They show relatively stable levels of poverty in urban areas from 1955 to 1963, then a significant rise for 1963 to 1968 with little change since then. For rural areas, the percent in poverty rose in the late 1950s, then declined, but rose

FIGURE 19

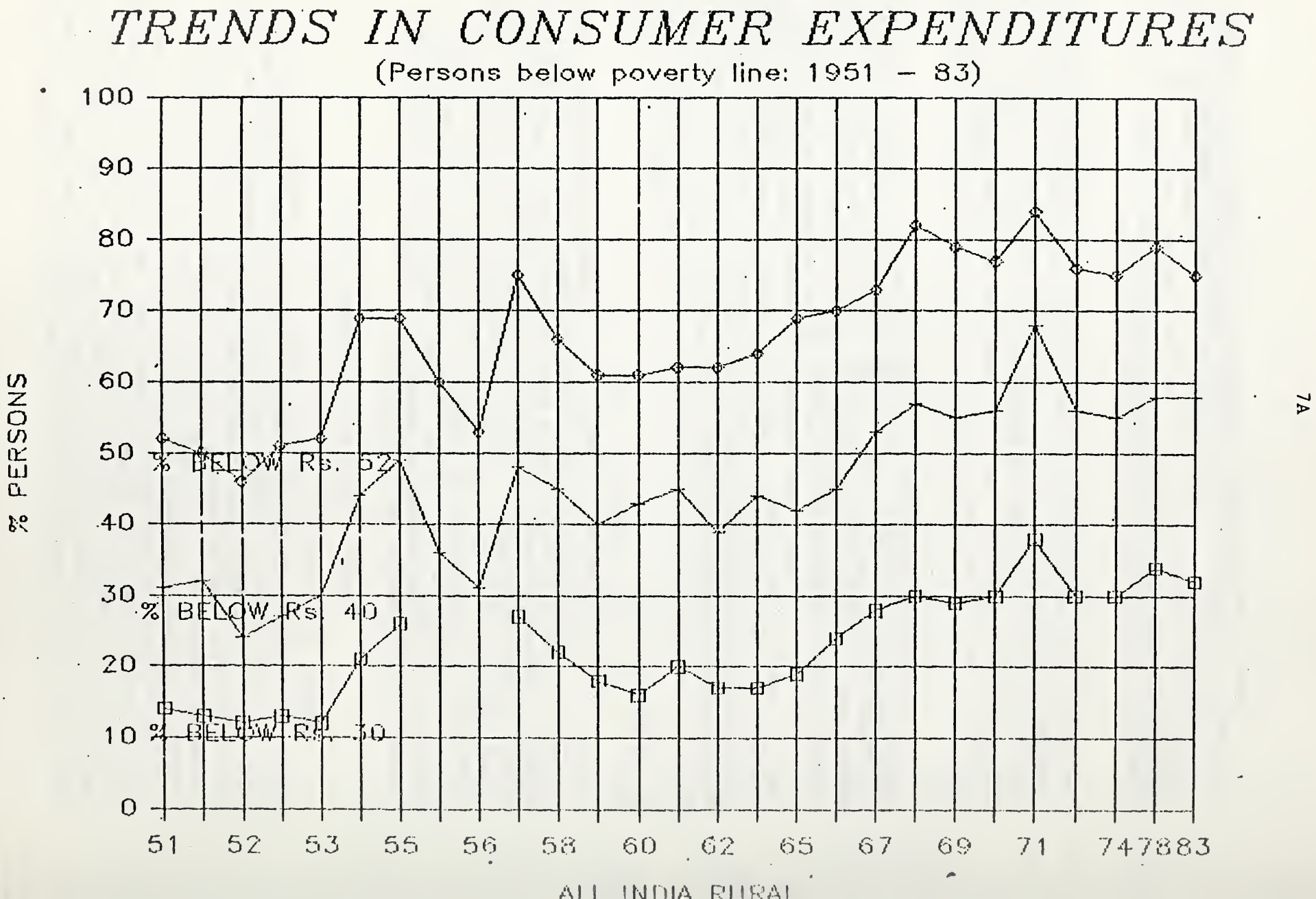
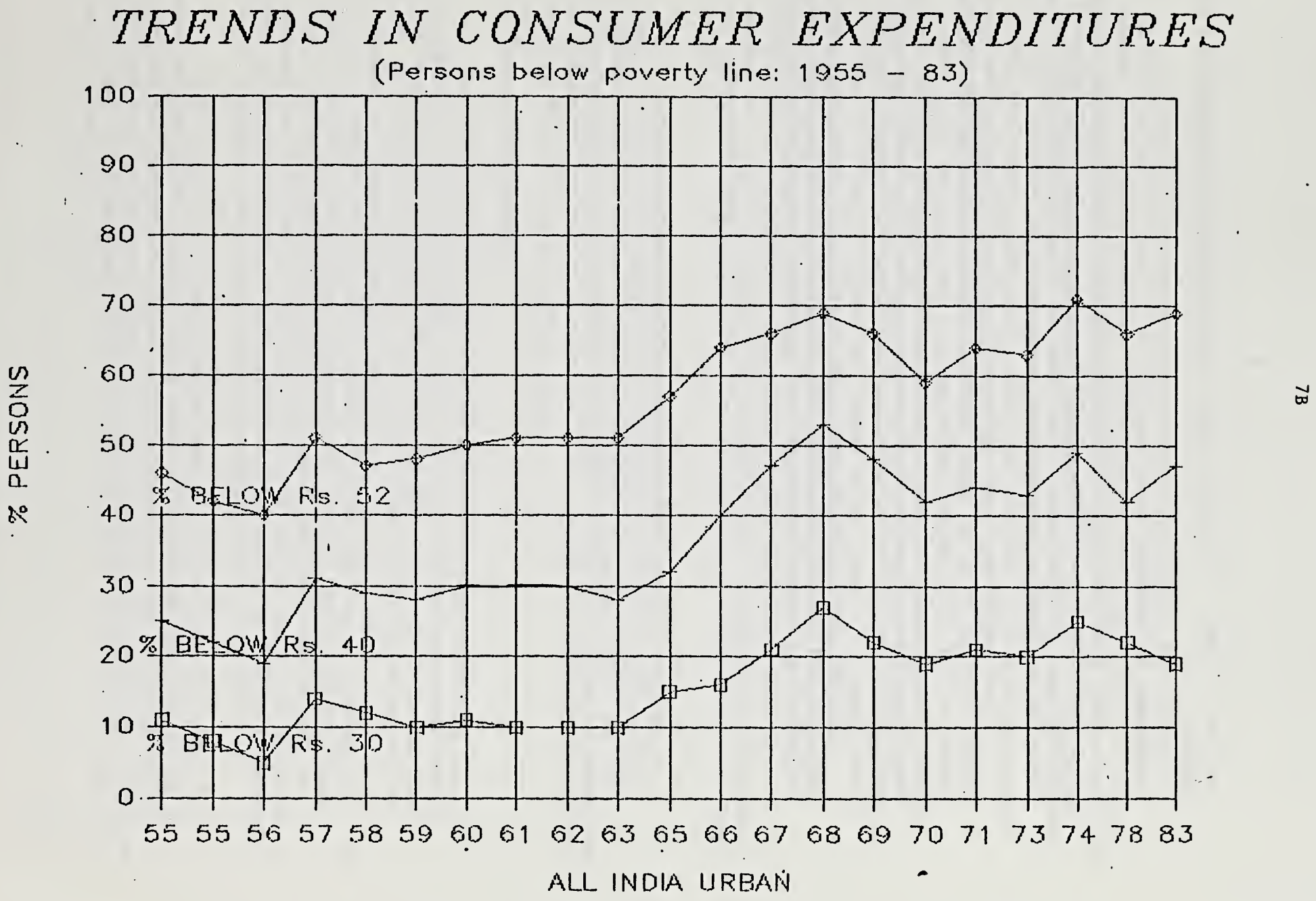

TRENDS IN CONSUMER EXPENDITURES
(Persons below poverty line: 1951 – 83)
% PERSONS
100
90
80
70
60
50
40
30
20
10
0
% BELOW Rs. 52
% BELOW Rs. 40
% BELOW Rs. 30
51
52
53
55
56
58
60
62
65
67
69
71
747883
ALL INDIA RURAL

FIGURE 20


TRENDS IN CONSUMER EXPENDITURES
(Persons below poverty line: 1955 – 83)
% PERSONS
100
90
80
70
60
50
40
30
20
10
0
% BELOW Rs. 52
% BELOW Rs. 40
% BELOW Rs. 30
55 55 56 57 58 59 60 61 62 63 65 66 67 68 69 70 71 73 74 78 83
ALL INDIA URBAN

for 1963 to 1968. It has been stable since then, as was the case with urban poverty.

D. Summary of Trends

Part I of this paper has depicted trends in real expenditures by NSSO sample households on all goods, foods, foodgrains, pulses and other commodities. Nutrient intake trends have been summarized as well for rural and urban India. NNMB data has also been summarized.

The broad trends in the different indicators are similar. We find that average consumption of all goods and of all foods declined in the 1950s and 1960s, but that this decline was arrested in the 1970s and early 1980s. For the poorest in both rural and urban India, the 1960s were the most difficult years as nutrient intake declined and poverty rose. The 1970s and early 1980s were years of some possible improvement in the welfare of the poorest in India.

In the next section of this report these trends will be compared with production and related policy indicators. An analysis of comparative trends in two states, Maharashtra and Orissa, is reported in Appendix 3 of this report.

II. Consumption and Production

As noted in the introduction, foodgrain production in India has increased at such a rate in the 1970s and early 1980s that by early 1986 substantial stocks of foodgrains (approximately 30 million tonnes) were being held. This means that the supply of foodgrains had increased more rapidly than demand at the prices prevailing to consumers. How was this relatively good production performance (many observers in the early 1970s predicted that India would be importing large quantities of foodgrains in 1986) related to consumption? More specifically, should the favorable production performance have been expected to markedly change the dimensions of the poverty-undernutrition problem in India?

These questions can be addressed by three different approaches. The first and most direct is the micro-economic level in which we treat the production changes as being reflected in changes in prices and incomes. With knowledge of changes in prices and incomes we can predict the associated changes in consumption. The second approach entails a more elaborate construction of a several market model and the calculation of changes in equilibrium prices and quantities. This approach allows a more direct imputation of the consumption impacts of specific policy variables on consumption. The third approach is an empirical or statistical approach based on a "reduced form" specification that directly related consumption to policy variables.

All three approaches will be taken in this section. Appendix 4 summarizes much of the underlying methodology, particularly of the third approach. All three show that while increased foodgrains supply has very favorable effects for poor people, very major increases in foodgrain supply and the associated economic adjustments would be required to eliminate the massive poverty undernutrition problem in India.

A. Prices and Consumption

Much can be learned about the relationship between production and consumption by simply examining trends in prices. Prices are determined in large part by costs of production and accordingly they reflect productivity gains in foodgrain production. They also reflect international prices and Government of India price support activities. In fact, surpluses do not accumulate (except for normal inventories) without government intervention. At present the GOI is supporting foodgrain prices above their market-cleaning level. The procurement prices paid to farmers and the prices charged to consumers are sufficiently high that the supply exceeds the quantity demanded, hence the surplus stocks. Were the GOI to allow prices to fall to equilibrium levels, consumers would gain, although producers would lose income.

Table 4 reports wholesale price indexes for food commodities and for non-food commodities. These indexes have a 1970 base and show how prices by commodity have changed over time. For the 1951-52 to 1970 period it can be seen that most prices moved together. Prices actually declined from 1951-52 to 1955-56 and then rose slowly with an abrupt rise in 1964 and 1965-66, years of foodgrain shortage in India.

TABLE 4: Wholesale Prices Indices Base: 1970-1971=100

		Food Grains	Cereals	Rice	Wheat	Jowar	Bajara	Maize	Ragi	Barley	Millets	Grae	Cearals Sub.	Pulses	Milk	Edible Oil	Meat Fish &	Veg. Fr. & Nuts	Sugar.	Salt	BW	Other Food	Total Food	Total Exp.
	NSS Rounds	1	2	3	4	5	6	7	8	9	10	11	13	14	15	16	17	18	21	22	25	26	27	30
ars	No.																							
-52	2	51.0	52.5	50.0	51.0	63.6	47.4	47.9	50.6	55.8	52.5	46.4	52.5	44.3	39.9	43.0	34.7	46.1	45.2	47.4	43.1	46.2	46.2	48.8
-52	3	51.0	52.5	50.0	51.0	63.6	47.4	47.9	50.6	55.8	52.5	46.4	52.5	44.3	39.9	43.0	34.7	46.1	45.2	47.4	43.1	46.2	46.2	48.8
-53	4	48.2	49.0	47.3	52.2	46.8	47.8	47.9	50.6	55.8	49.0	52.4	49.0	45.3	39.9	43.0	34.7	36.4	45.2	47.4	43.1	41.9	41.9	40.4
-53	5	48.2	49.0	47.3	52.7	46.8	47.8	47.9	50.6	55.8	49.0	52.4	49.0	45.3	39.9	43.0	34.7	36.4	45.2	47.4	43.1	41.9	41.9	40.4
-54	6	46.5	47.9	47.1	48.9	46.8	49.3	49.0	53.9	52.9	47.9	46.6	47.9	41.4	39.4	43.0	33.9	38.8	45.2	47.4	43.1	43.1	43.1	42.3
-54	7	46.5	47.9	47.1	48.9	46.8	49.3	49.0	53.9	52.9	47.9	46.6	47.9	41.4	39.4	43.0	33.9	38.8	45.2	47.4	43.1	43.1	43.1	42.3
-55	8	36.5	38.9	38.9	39.6	35.9	37.4	37.3	39.1	38.5	38.9	28.2	38.9	26.7	36.6	43.0	33.2	35.3	45.2	47.4	43.1	38.6	38.6	38.3
-56	9	35.2	37.0	37.0	38.1	31.4	40.0	36.6	31.3	37.3	37.0	25.8	37.0	28.2	35.8	43.0	33.3	36.6	45.2	47.4	43.1	36.1	36.1	36.1
-56	10	35.2	37.0	37.0	38.1	31.4	40.0	36.6	31.3	37.3	37.0	25.8	37.0	28.2	35.8	43.0	33.3	36.6	45.2	47.4	43.1	36.1	36.1	36.1
-57	11	45.0	47.2	45.7	46.5	57.3	58.3	50.8	44.3	55.0	47.2	37.3	47.2	36.6	39.9	43.0	33.5	40.8	45.2	47.4	43.1	42.0	42.0	41.9
-59	13	47.0	49.4	49.6	46.2	53.2	60.0	53.5	53.1	53.0	49.4	35.6	49.4	37.4	41.8	43.0	34.0	41.3	45.2	47.4	43.1	43.5	43.5	43.2
-59	14	51.2	52.3	47.9	55.5	48.9	60.0	59.7	51.7	69.1	52.3	50.3	52.3	47.1	42.8	43.0	37.6	42.5	45.2	47.4	43.1	47.2	47.2	45.6
-60	15	49.2	51.0	49.8	50.7	55.4	60.1	54.9	57.0	57.4	51.0	39.3	51.0	42.4	45.2	46.7	38.9	46.5	48.2	52.6	45.7	47.9	47.9	47.0
-61	16	49.3	51.2	51.2	47.4	56.9	62.2	52.2	60.5	59.5	51.2	45.8	51.2	42.1	46.3	46.4	42.9	43.1	48.2	52.6	46.6	48.1	48.1	49.6
-62	17	48.4	50.1	49.7	47.9	52.6	63.3	52.8	59.9	55.2	50.1	43.6	50.1	41.7	46.4	49.3	47.0	50.0	48.2	52.6	45.7	48.5	48.5	49.5
-64	18	55.7	56.1	58.9	50.7	54.4	61.0	52.6	57.8	69.0	56.1	51.5	56.1	54.0	50.2	52.2	58.4	51.6	54.3	57.9	50.0	54.4	54.4	53.8
-65	19	70.4	67.9	63.2	66.1	87.0	83.0	78.0	84.7	101.9	67.8	84.6	67.8	80.1	57.4	60.2	66.5	69.3	65.5	68.4	56.9	65.6	65.6	64.1
-66	20	74.6	73.3	67.9	71.5	88.0	98.2	96.2	114.3	109.2	73.3	86.4	73.3	79.6	65.7	64.2	82.1	69.9	71.1	73.7	65.5	71.1	71.1	70.4
-67	21	83.4	87.1	83.8	85.2	89.9	105.2	109.6	98.4	129.1	87.1	106.2	87.1	93.6	73.4	78.6	99.8	85.7	82.7	84.2	73.3	82.7	82.7	82.0
-68	22	110.4	103.5	99.6	102.4	103.8	117.3	138.9	102.0	148.7	103.5	144.2	103.5	136.5	85.1	87.2	98.6	96.2	98.0	100.0	85.3	97.8	97.8	92.4
-69	23	97.2	93.3	97.6	97.9	97.3	112.2	100.2	109.3	99.9	98.3	91.7	98.3	92.8	90.5	92.3	97.5	93.1	82.2	84.2	90.5	92.5	92.5	89.7
-70	24	100.7	100.9	97.6	103.0	101.2	120.3	107.6	110.4	117.4	100.9	117.5	100.9	99.5	94.0	94.4	93.3	91.4	97.5	100.0	94.0	97.5	97.5	96.2
-71	25	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
-73	27	119.5	118.8	116.0	109.5	126.0	140.9	125.0	115.8	133.6	115.8	131.4	115.8	137.9	108.6	99.4	116.3	105.7	187.8	105.8	116.4	111.3	111.3	110.7
-74	28	141.9	134.8	140.2	108.2	151.2	165.5	174.2	145.2	190.3	134.8	201.3	134.8	176.9	133.4	147.1	142.1	143.2	191.9	136.8	139.6	136.6	136.6	141.8
-78	32	170.4	161.3	162.0	156.5	157.4	169.1	177.9	160.3	179.3	161.3	198.6	161.3	215.2	157.0	175.8	196.6	176.6	185.3	184.2	185.3	173.6	173.6	183.8
--	38	273.8	259.1	292.0	218.0	241.1	231.1	263.4	250.6	256.0	259.1	327.8	259.1	346.5	251.0	291.0	361.0	300.7	284.8	305.2	306.9	283.2	283.2	304.1

After 1970, it is clear that prices did not move together. Food prices rose less rapidly than non-food prices. (The food index rose to 283.2 in 1983 while the index for food and non-food rose to 304.1.) Further substantial price differentials have emerged by commodity. The price of wheat has the lowest rate of increase over the period while the prices of meats and pulses have risen most. The price of wheat has declined relative to the prices of pulses to 63 percent of the 1970-71 relationship. This is clearly a large factor behind the consumption patterns which show a substantial increase in wheat consumption and a decline in the consumption of pulses. In general, cereals as a group have experienced a relative price decline reflecting the gains in cereal productivity.

These changing prices after 1971 have produced a pattern by expenditure class that has favored the poorest groups. Table 5 reports a price index by 1970-71 expenditure class based on 1970-71 quantity weights for urban India. (See Appendix Table 2.1 for class range.) It illustrates the point that the improvement in agricultural productivity in the 1970s and 1980s has had a price bias favoring the poor.

The indexes show the weighted change in all prices for the expenditure groups (the lowest expenditure groups are on the left). The weights are the consumption pattern of the expenditure class. Thus the price index for the 3rd expenditure class moved from .36 in 1954-55 to 1.00 in 1970-71 and to 2.87 in 1983. For the highest expenditure class prices rose in the same pattern until 1970-71 but after 1970-71 the index for the highest expenditure class rose more rapidly reaching a level of 3.24 in 1983. The favorable agricultural production performance behind these price changes thus produced a price bias favoring the poor.

Table 6 reports crude tabulations of the expected or predicted changes in consumption that would be expected from changes in relative prices for 3 periods, 1964-65 to 1972-73, 1972-73 to 1977-78 and 1977-78 to 1983. The expected consumption changes are derived from price and income elasticities estimated by Binswanger and Swamy (reported in Appendix 4). These predictions are very partial in nature because they do not take into account non-price factors and do not adequately consider real income changes (see the next section) associated with agricultural production.

In general, actual consumption changes conform to the predicted pattern. Some significant differences in magnitude appear, but, on the whole, changing price patterns explain changing rice and wheat consumption quite well.

B. Prices, Incomes and Consumption: A General Equilibrium Approach

The simple price calculations of the previous section were inadequate in that they did not take income effects into account. They also did not allow a direct analysis of the impact on consumption of specific policy variables. These issues cannot be addressed with a simple calculation. A larger model is required. Such a model has been developed and estimated for the Indian economy by Binswanger, Quizon and Gupta (1985) and Evenson (1985)--the BEQG model.

The model itself is schematically described in Figure 20. There are two behavioral "cores" in this model and two sets of markets, agricultural factors

Figure 21 Distributional Policy Analysis Model: Schematic Representation

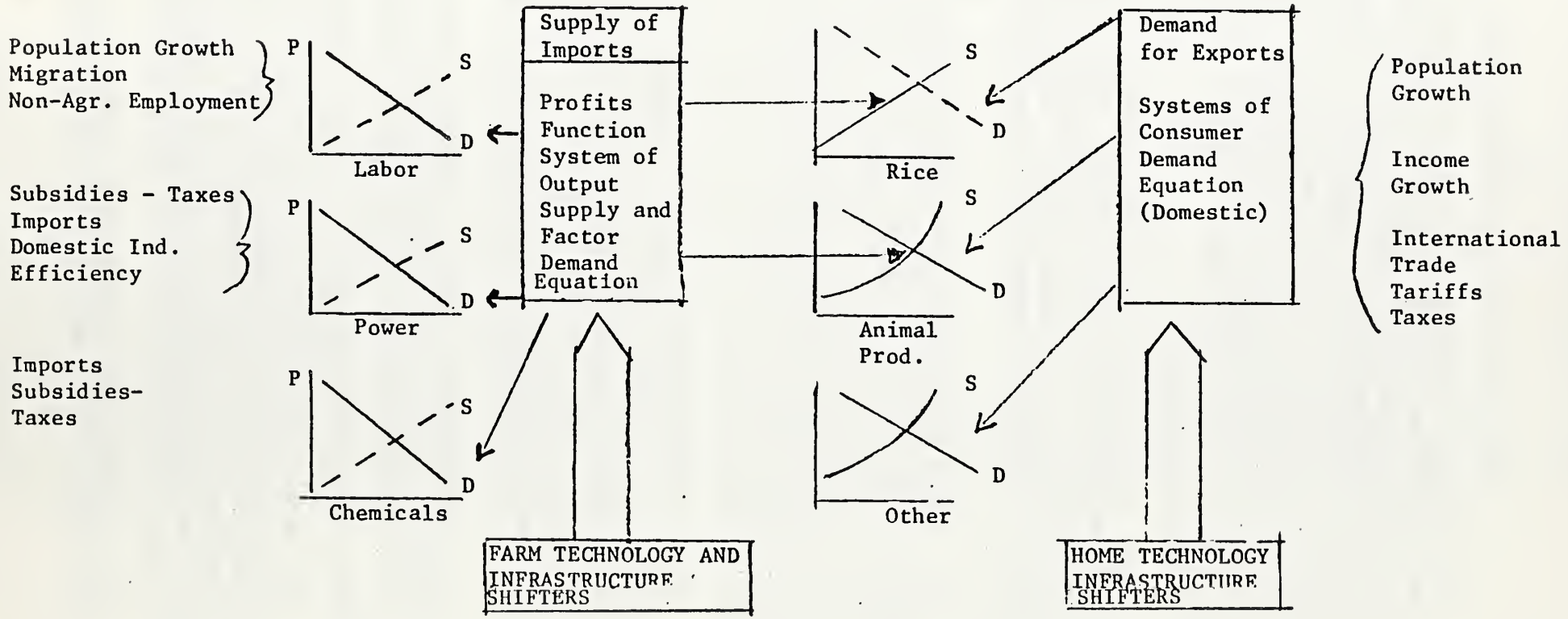


TABLE 5: Price Indexes For 1970-1971 Expenditure Classes Urban India

NSS Rounds No.														All
8	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.00	0.36
9	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.00	0.35
10	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.00	0.35
11	0.42	0.42	0.42	0.41	0.41	0.41	0.41	0.41	0.41	0.41	0.40	0.40	0.00	0.41
13	0.43	0.43	0.43	0.43	0.43	0.42	0.42	0.42	0.42	0.42	0.42	0.41	0.00	0.42
14	0.48	0.48	0.48	0.47	0.47	0.47	0.47	0.46	0.46	0.45	0.45	0.44	0.00	0.46
15	0.51	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.49	0.49	0.49	0.49	0.00	0.49
16	0.51	0.51	0.51	0.50	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.51	0.00	0.51
17	0.53	0.53	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.52	0.53	0.53	0.53	0.53
18	0.55	0.55	0.55	0.55	0.55	0.55	0.54	0.54	0.54	0.54	0.54	0.53	0.53	0.54
19	0.70	0.69	0.69	0.68	0.68	0.68	0.67	0.67	0.67	0.66	0.65	0.65	0.63	0.66
20	0.73	0.73	0.73	0.73	0.72	0.72	0.72	0.72	0.72	0.71	0.71	0.71	0.70	0.71
21	0.86	0.86	0.86	0.85	0.85	0.85	0.84	0.84	0.84	0.83	0.83	0.82	0.81	0.83
22	1.01	1.02	1.01	1.00	0.99	0.98	0.97	0.96	0.95	0.94	0.92	0.90	0.86	0.94
23	0.95	0.95	0.95	0.94	0.94	0.93	0.93	0.92	0.92	0.91	0.90	0.89	0.87	0.91
24	0.99	0.99	0.99	0.99	0.98	0.98	0.98	0.98	0.97	0.97	0.96	0.96	0.95	0.97
25	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
27	0.00	0.00	1.32	1.23	1.23	1.23	1.23	1.23	1.22	1.22	1.21	1.21	1.19	1.22
28	0.00	0.00	1.73	1.63	1.64	1.64	1.65	1.65	1.66	1.67	1.68	1.69	1.72	1.67
32	1.86	1.71	1.73	1.59	1.69	1.68	1.69	1.68	1.66	1.73	1.70	1.80	1.91	1.75
38	0.00	0.00	2.87	2.80	2.92	2.93	2.95	2.95	2.88	3.21	3.17	3.05	3.24	2.95

Table 6: Prices, Incomes and Predicted Changes

A. Changes in Relative Price (percent)

	Rice	Wheat	Coarse Cereals	Other Foods	Non Food	Change in Real Expenditure Rural	Urban
1964-5 to 1972-3	+ 6.93	- 6.12	-10.3	+7.6	0	-2.5	-4.4
1972-3 to 1977-8	-16.0	-11.5	-22.4	-8.1	12.8	15.0	5.8
1977-8 to 1983	+ 9.3	-15.5	- 9.5	0	3.0	-1.5	1.0

B. Predicted and Actual Changes in Quantities Consumed

	Rice		Wheat		Coarse Cereals		Other Food		Non Food	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
1964-5 to 1972-3										
Predicted	- 3.1	- 4.2	8.2	6.45	6.5	8.1	- 8.03	-10.0	- .3	- 3.15
Actual	- 1.9	-13	39	14	15	10	1	4	-2.5	- 1
1972-3 to 1977-78										
Predicted	23.9	18.4	7.42	-1.5	4.7	12.5	15.3	6.03	9.9	- 4.6
Actual	8.1	9	4.3	-1.5	-27	-20	12	6	17	- 3
1977-8 to 1983										
Predicted	- 9.8	-10.1	19.4	18.9	-5.02	-4.6	3.1	2.7	2.0	1.2
Actual							6	3	-9.4	- 2

and agricultural products (food). The producer core is based on variable profit maximizing behavior by farmers. This behavior yields the demand functions for the agricultural factor markets. It also yields the supply functions for agricultural products (system (4), Appendix 4). This farmer behavior is changed or shifted by changes in technology and other infrastructure changes. The consumer core yields the demand functions for food and other products (system (3), Appendix 4).

The product markets are thus complete when estimates of both core systems are available. In the BEQG model the producer core estimates are from Evenson (1985) and the consumer core estimates are from Swamy and Binswanger (1985) (see the previous section). The model is "closed" on the factor market side by specifying the supply side of the factor markets.
A model of this type then can be solved for an initial set of prices and quantities in the two markets. Thus equilibrium also specifies an initial set of food consumption levels by different population groups. In the BEQG model the five population groups are:

Rural Landless Households
Small Farm Households
Medium Farm Households
Large Farm Households
Urban Households

The consumption of each of these groups is determined in part by the groups' income, which in turn is determined by the factor markets and the ownership patterns of land and animals, and by the prices of foods and non-foods which are determined in the product markets.

The model is now capable of computing a new equilibrium set of prices, quantities, incomes and consumption patterns due to a change in one or more policy shifter. These policy shifters include technology shifters that operate through the producer core, factor supply shifters that operate by changing the supply of land, labor, tractors, etc., and product demand shifters such as population change, income changes, and international trade policies.

Tables 7 through 9 provide simulations of a variety of such shifter effects. These include demographic, technical change and investment shifter scenarios. Table 10 reports a more detailed set of population change scenarios.

Each policy simulation in Tables 7 - 9 is reported in two versions. Version A, which is of most interest, presumes that the policy shift occurs in all-India and that India engages in little international trade. It is thus a "closed economy" simulation. Version B presumes that the policy impact occurs only in North India (Punjab-Haryana and Uttar Pradesh) region. No shift occurs in the Rest of India (ROI) although the income of households in the ROI is affected. This can be viewed as an "open economy" model in which North India has free trade with the rest of India.

The consequences of the policy simulations are given in terms of changes in real incomes and in per capita cereal consumption for each group. In addition, changes in prices and quantities are reported.

Table 7 DEMOGRAPHIC SCENARIOS

SIMULATIONS

	Slower Population Growth		Faster Urbanisation		Slower Population Growth and Faster Urbanisation		Increased Urban Income		Combination of 1.3 and 2.1	
	1.1		1.2		1.3		2.1		2.2	
	A	B	A	B	A	B	A	B	A	B
1) Real Per Capita Income (N.W.)	7.77	7.34	4.44	7.12	12.21	14.46	1.99	2.67	14.20	17.13
2) Aggregate Agricultural Output (N.W.)	-2.46	-2.15	0.06	-1.71	-2.40	-3.86	0.51	0.05	-1.89	-3.80
3) Quantities of:										
Rice	-2.54	-2.92	-6.70	-3.84	-9.23	-6.76	-0.94	-0.26	-10.17	-7.02
Wheat	-3.33	-2.84	2.60	-1.85	-0.73	-4.69	1.18	0.15	0.44	-4.34
Coarse Cereals	-12.01	-8.00	-20.49	-1.95	-32.50	-9.95	-2.20	1.28	-34.70	-8.67
Other Crops	-0.92	-1.03	1.27	-1.36	0.35	-2.39	0.51	-0.10	0.86	-2.49
4) GNP Deflator	-3.03	0.26	25.48	1.97	22.45	2.23	6.30	0.41	28.75	2.64
5) Prices of:										
Rice	-0.22	2.17	53.44	0.75	53.22	2.92	11.31	-0.39	64.53	2.53
Wheat	-0.45	2.95	61.70	4.02	61.25	6.97	13.48	0.23	74.74	7.20
Coarse Cereals	-17.84	-6.09	-25.66	6.46	-43.50	0.37	-1.71	3.00	-45.21	3.37
Other Crops	-5.40	-0.50	26.17	2.41	20.77	1.91	7.21	0.73	27.97	2.63
6) Real Wage Rate	12.94	13.42	15.35	12.55	28.29	25.97	0.78	0.09	29.07	26.07
7) Labor Employment	-4.80	-4.70	-3.39	-4.14	-8.20	-8.84	0.21	0.02	-7.99	-8.81
8) Real Wage Bill	8.13	8.72	11.96	8.41	20.09	17.13	0.99	0.12	21.08	17.25
9) Real Land Rent	-25.18	-19.40	31.89	-14.15	6.71	-33.54	12.28	0.80	18.99	-32.74
10) Real Per Capita Income of:										
Rural Landless Households	14.72	13.51	4.63	12.02	19.35	25.53	-2.01	-0.14	17.34	25.39
Small Farm Households	11.82	11.84	12.71	11.26	24.53	23.10	0.37	0.03	24.90	23.12
Medium Farm Households	6.78	7.39	13.17	7.79	19.95	15.19	1.45	0.11	21.40	15.30
Large Farm Households	0.69	1.40	19.44	3.34	18.75	4.74	4.32	0.30	23.08	5.04
Urban Households	7.06	4.80	-13.81	3.87	-6.75	8.67	4.78	9.22	-1.97	17.89
ROI Households		0.00		-1.70		-1.78		-0.42		-2.20
11) Per Capita Cereal Consumption of:										
Rural Landless Households	9.76	8.43	0.24	6.84	10.00	15.27	-1.76	-0.22	8.21	15.04
Small Farm Households	7.62	7.04	4.10	6.09	11.72	13.13	-0.47	-0.10	11.24	13.02
Medium Farm Households	4.27	3.99	2.46	3.59	6.73	7.58	-0.17	-0.06	6.55	7.52
Large Farm Households	-0.42	0.24	-3.27	0.69	2.85	0.93	0.92	0.04	3.76	0.97
Urban Households	5.31	3.31	-14.10	1.75	-8.59	5.06	2.83	6.75	-5.76	11.81
12) Aggregate Per Capita Cereal Consumption	6.05	5.24	-3.07	1.88	2.98	7.12	0.08	1.19	3.06	8.31

Table 8 TECHNICAL CHANGE SCENARIOS

SIMULATIONS

	Increase in Rice Yields (+20%)		Increase in Wheat Yields (+20%)		Increase in Coarse Cereal Yields (+20%)		Increase in Other Crops Yields (+20%)		Increase in Yields of All Crops (+10%)	
	4.1		4.2		4.3		4.4		4.5	
	A	B	A	B	A	B	A	B	A	B
Real Per Capita Income (N.W.)	3.68	0.92	3.62	3.49	0.48	0.62	8.65	6.77	8.22	5.90
Aggregate Agricultural Output (N.W.)	-0.26	1.36	6.65	7.42	1.37	1.37	11.60	12.03	9.68	11.09
Quantities of:										
Rice	27.60	24.20	3.16	-2.17	-0.74	-0.90	0.25	4.89	15.13	14.01
Wheat	-6.39	-1.62	17.66	21.60	1.75	1.42	1.46	-1.01	7.24	10.20
Coarse Cereals	20.35	3.13	5.62	6.68	4.07	14.33	-12.99	-17.85	8.53	3.15
Other Crops	-1.47	0.39	0.13	-0.50	1.08	0.26	21.79	24.15	10.77	12.15
GNP Deflator	-23.06	-0.81	-10.41	-3.44	2.63	1.29	-8.59	-0.12	-17.37	-1.54
Prices of:										
Rice	-73.24	-6.02	-23.46	-7.68	23.69	12.77	3.45	6.89	-34.78	2.98
Wheat	-61.82	-3.74	-44.03	-21.09	21.41	11.78	8.13	10.88	-39.19	-1.09
Coarse Cereals	48.42	10.28	16.03	10.20	-62.57	-38.20	-34.93	-21.45	-16.52	-19.59
Other Crops	-16.34	0.11	-3.55	0.84	-2.20	-1.17	-21.52	-4.27	-21.80	-2.25
Real Wage Rate	-2.82	0.38	-0.64	1.04	0.54	0.51	2.15	1.91	-0.38	1.93
Labor Employment	-0.58	0.15	0.01	0.50	0.32	0.29	0.88	0.77	0.31	0.85
Real Wage Bill	-3.40	0.53	-0.63	1.55	0.86	0.80	3.03	2.68	-0.07	2.78
Real Land Rent	-37.88	2.20	-6.32	8.74	9.62	6.43	21.55	36.48	-6.51	26.93
Real Per Capita Income of:										
Rural Landless Households	8.18	0.60	4.33	2.49	0.34	0.58	5.46	2.25	9.16	2.97
Small Farm Households	0.12	0.70	1.58	2.61	1.52	1.28	6.12	5.82	4.67	5.21
Medium Farm Households	-3.16	0.97	1.44	3.69	1.88	1.49	8.70	9.89	4.43	8.02
Large Farm Households	-12.78	1.31	0.06	5.56	3.52	2.50	12.29	17.27	1.54	13.32
Urban Households	16.31	0.94	7.41	3.09	-2.60	-1.35	9.59	1.76	15.35	2.22
ROI Households		0.73		1.96		-0.03		0.96		1.81
Per Capita Cereal Consumption of:										
Rural Landless Households	10.78	0.27	9.32	5.02	1.79	1.79	-1.80	0.11	10.05	3.59
Small Farm Households	7.21	0.43	8.03	5.19	2.01	1.94	-1.81	2.04	7.72	4.81
Medium Farm Households	6.78	0.66	9.28	6.45	1.58	1.69	-1.09	3.77	8.27	6.28
Large Farm Households	2.34	0.85	11.96	9.57	0.87	1.22	-0.93	6.43	7.12	9.03
Urban Households	15.18	0.26	15.09	7.87	-0.83	-0.03	1.45	-0.78	15.45	3.64
Aggregate Per Capita Cereal Consumption	8.78	0.49	10.69	6.71	1.11	1.34	-0.79	2.15	9.90	5.35

Table 9 INVESTMENTS SCENARIOS
SIMULATIONS

	Accelerated Irrigation (+10%)		Accelerated Capital and Marketing Investments (+10%)		Accelerated Irrigation(+10 and Capital an Marketing Investments (+5%)	
	3.1		3.2		3.3	
	A	B	A	B	A	B
Real Per Capita Income (N.W.)	3.61	1.35	2.70	1.59	4.96	2.14
Aggregate Agricultural Output (N.W.)	6.52	8.04	3.25	4.02	8.15	10.05
Quantities of:						
Rice	11.28	8.87	8.21	6.95	15.38	12.34
Wheat	5.24	9.01	2.79	4.84	6.64	11.43
Coarse Cereals	11.18	1.98	7.11	4.15	14.74	4.05
Other Crops	6.34	7.95	2.62	3.17	7.65	9.54
GNP Deflator	-21.49	-2.06	-10.34	-0.76	-26.66	-2.44
Prices of:						
Rice	-41.37	0.13	-20.82	1.08	-51.78	0.67
Wheat	-49.74	-5.10	-23.59	-1.36	-61.53	-5.78
Coarse Cereals	2.18	-11.08	-4.31	-8.82	0.02	-15.49
Other Crops	-22.09	-2.01	-9.99	-0.77	-27.08	-2.40
Real Wage Rate	2.80	5.31	-1.42	-0.04	2.09	5.28
Labor Employment	1.54	2.17	-0.30	0.03	1.39	2.19
Real Wage Bill	4.34	7.48	-1.71	-0.01	3.48	7.48
Real Land Rent	-54.61	-17.51	-15.41	2.37	-62.32	-16.33
Real Per Capita Income of:						
Rural Landless Households	11.23	4.91	4.04	0.83	13.25	5.33
Small Farm Households	2.79	3.76	1.11	1.48	3.35	4.50
Medium Farm Households	-4.27	-0.03	0.40	2.37	-4.06	1.16
Large Farm Households	-18.67	-5.62	-3.00	3.29	-20.17	-3.97
Urban Households	17.48	3.27	7.26	0.55	21.11	3.54
ROI Households		1.91		0.85		2.34
Per Capita Cereal Consumption of:						
Rural Landless Households	11.23	4.74	5.54	1.57	14.00	5.52
Small Farm Households	6.57	3.91	4.06	1.92	8.60	4.87
Medium Farm Households	3.62	1.78	4.17	2.43	5.71	3.00
Large Farm Households	-2.58	-0.87	2.78	2.98	-1.19	0.62
Urban Households	17.90	4.70	8.27	1.64	22.04	5.52
Aggregate Per Capita Cereal Consumption (NW)	7.91	3.11	5.07	2.06	10.44	4.14

For the purposes of this paper, we are interested in policies that change cereal consumption and we are particularly interested in policies that impact on the poorest households - in this case the landless rural household. Recall that our food consumption data showed a general downward trend through the 1950s and 1960s with a reversal of this trend in the 1970s and 1980s. Furthermore, recent data indicate that the poorest deciles of both urban and rural India have increased consumption so that they have regained levels they enjoyed in the early 1960s. Their level of consumption, however, still falls far short of minimum requirements.

Table 7 reports a major part of the story. Rapid population growth reduces real incomes and cereal consumption and does so in a regressive fashion. Thus a slowing of population growth has a positive and progressive impact on food consumption. I will return to this issue in more detail when I discuss Table 10.

Table 7 shows that faster urbanization, i.e., more rural to urban migration raises the consumption of rural households and lowers the consumption of urban households. Since India has had a generally stable rural-urban population ratio, this was not a large factor until the 1970s. The 1981 census does indicate a slight reduction in the rural proportion of the population and in the proportion of the labor force in agriculture. This is probably a factor influencing consumption in the latest survey rounds.

Table 8 shows that improved cereal yields cause declines in cereal prices and increases in cereal consumption. Rice yield's improvement is progressive in its impact. Urban consumers gain from rice and wheat improvement but not from coarse cereals because they have lower consumption levels of coarse cereals and because improved technology in coarse cereals causes farmers to produce less rice and wheat which causes a rise in their prices. In fact, over the recent period wheat technology has been the dominant form of crop technology improvement while coarse cereal and rice improvements have been lower. Wheat prices have fallen steadily relative to other crops -- especially pulses. This has generally had a positive impact on cereal consumption.

Table 9 shows the impact of accelerated investment in irrigation and markets. These investments lead to real income increases and food consumption increases. These increases are progressive, i.e., they benefit the poor most <u>provided</u> that farmers pay for the investments. If the investments are in the form of a "grant", the fall in land rents will be compensated for by the irrigation grant and the impact will not necessarily be progressive. Urban consumers will benefit in any case. Notice as with virtually all of these impacts, Version B (open trading) shows that the effects of policy changes are smaller if introduced only in part of India.

Table 10 reports simulations of population, technical change, irrigation and land base expansion similar to those shown for Version A in the earlier tables. This table provides some more complex calculations for population change as well as providing land base change simulations. The technology base simulation is based not on the yield increase simulations of Table 8, but on the estimated impact of a larger agricultural research, extension and HYV development investment in India.

Table 10 Simulated Economic Effects of Population Growth Decline, Technology Investment, Land Investment and Irrigation Investment. North India

Effect on:	10% Decline in Population					10% Increase In		
Real Per Capita Income	Malthusian	Boserupian	Total	Rural Landless Only	Urban Only	Technology Base	Land Base	Irrigation Base
a) All Groups	7.77	-2.80	4.97	2.18	.83	.26	2.60	1.78
b) Rural Landless Households	14.72	-8.36	6.36	7.68	1.69	1.12	6.64	6.58
c) Small Farm Households	11.82	-.59	11.29	3.31	-.15	1.10	-.11	-.30
d) Medium Farm Households	6.78	.39	7.17	.73	-1.11	-1.35	-3.19	-4.18
e) Larger Farm Households	.69	1.44	2.13	-1.93	-13.45	-3.54	-11.26	-13.52
f) Urban Households	7.06	-1.47	5.59	1.06	10.24	3.36	13.01	12.52
Agricultural Employment	-4.80	-2.95	-7.75	-1.95	-2.29	-.44	-.30	-.07
Real Agricultural Wages	12.94	.38	13.32	7.33	-.66	.22	-1.88	-.10
Real Land Rent	-25.18	40.26	15.08	-5.42	-7.40	-10.20	-31.45	-38.15

The population change calculations extend the simple Malthusian analysis in two ways. The first is to consider population-induced or "Boserupian" effects. Boserup showed that population density does stimulate supply increasing investments. Evenson (1985) estimated these to be substantial in Indian agriculture. They primarily take the form of stimulation of investments in irrigation and land base expansion. Thus, when population is reduced, these population-induced effects are lost. After adjustment from these (total column in Table 10) we still find that population reduction has a large and progressive impact on real incomes (and food consumption).

The column for "Rural Landless Only" and "Urban Only" can be interpreted to show the effect of selective population reduction, e.g., through worker migration to Middle East employment. Since India has had some such migration, it is of interest to note that it has a positive and progressive impact on real incomes and food consumption. This is, of course, larger if the rural population is reduced and the relative gains to urban and rural households depend on the source of the labor going abroad.

These simulations could, with some further work, be converted into a predictive model in which time series data for India over the past 20 years or so on the shifter variables could be assembled. The model could then produce a real income-cereal consumption pattern over time and we could compare this to the trends observed in this study. This is not feasible in the present study but some of the main features of the shifter variables can be discussed.

Clearly rapid population growth itself has a general negative and regressive impact on real income and consumption. This is true even when population-induced shifter impacts are considered. Since India has not slowed its population growth rate markedly yet, the recent slowdown can only account for a small part of a halting or turn-around in the consumption trends as observed in this study.

It is also clear that there are a number of policy interventions in agriculture that have positive and generally progressive impacts on consumption. Some of these policy variables are population-induced in part (irrigation and land base expansions) but most are not (technology, rural electrification, roads, etc.). They constitute deliberate actions on the part of both the private and public sector. Most are motivated by a desire to increase agriculture production and productivity, and, indirectly, consumption.

Indian food production and productivity data as well as investment and policy data show that India has been relatively successful in its pursuit of production objectives over the past decade. This relative success has produced the end of the erosion of consumption that characterized the 1950s and 1960s. A combination of effective agricultural policies (with research, extension and HYV's being especially important) has produced positive results in terms of both average food consumption and of food consumption for the poorest segment of both rural and urban India. The gains have not been achieved in every region because production and productivity gains have not been evenly achieved throughout India.

C. Direct Estimation (Reduced Form) of Consumption Effects. State and District NNMB Data

Appendix 4 develops a rationale for estimations of consumption and

nutrition status effects using data where policy variables can be considered to be exogenous to (i.e., not influenced by) the household. The methodology is relatively simple. Consumption and nutritional status variables are regressed on exogenous policy variables which in effect are shifters of supply or demand variables.

The NNMB consumption and nutritional status data reviewed in Part I of this report are available at the state level for several years for 10 states and at the district level for 1978, 1979 and 1980. An attempt has been made to collect data on exogenous policy variables from other sources to pursue a reduced farm analysis with these data. It should be acknowledged from the outset that two problems are likely to affect the results. The first is that some variables may show little correlation with consumption because people respond to these variables by migrating to favorable locations and away from unfavorable locations. Thus a policy variable that has a favorable impact on consumption or nutritional status may induce migration into the region that then mitigates the impact. The second is that some of the variables that might appear to be exogenous in that individual families do not determine them are in fact not exogenous because governments respond to household characteristics in deciding where and when to operate programs. If a nutrition supplement program is located where nutrition problems are most severe, an inverse correlation between program impacts and nutritional status will be erected.

These problems are probably quite severe in the Indian data. The results presented below have probably been affected by them. Nonetheless, some of the results are instructive and worth discussion. A fuller treatment requires more data and an econometric specification correcting for the biases discussed above.

1. Reduced Form Analysis of State NNMB Data

I now turn to the first of two "reduced form" analyses of NNMB data. This utilizes state data for 10 states for the years 1974, 1976, 1978, 1979, 1980 and 1982. Two sets of data are analyzed, food consumption and nutritional or health status. The analysis is a simple linear regression of pooled time-series cross-section data. Dummy variables for states have been utilized to correct for state differences in taste patterns and measurement differences by state units. This means that state variables that do not change over time could not be utilized in this analysis.

The dependent variables in the analysis are:

Food Consumption: (Per capita) cereals, pulses, leafy vegetables, other vegetables, nuts and oilseeds, condiments and spices, fruits, meat, milk, fats and oils and sugar.

Nutritional Status

PC	: Percent individuals deficient in both calories and protein
PPCM	: Percent individuals with adequate protein but deficient in calories
INF	: Percent infants without nutrient deficiency signs
PS	: Percent preschoolers without nutrient deficiency signs
M5-12	: Percent males 5-12 years without nutrient deficiency signs
M12-21	: Percent males 12-21 years without nutrient deficiency signs

F12-21	: Percent females 12-21 years without nutrient deficiency signs
BM	: Percent boys 1-5 years with moderate Gomez undernutrition rating
BS	: Percent boys 1-5 years with severe Gomez undernutrition rating
GM	: Percent girls 1-5 years with moderate Gomez undernutrition rating
GS	: Percent girls 1-5 years with severe Gomez undernutrition rating
IMR	: Infant mortality rate rural areas
IMU	: Infant mortality rate urban areas

Each of these variables is regressed on a common set of determining variables. These determining variables are primarily exogenous to household decisions, i.e., they are determined by organizations and circumstances rather than by household choice. Some are public program variables, some the outcome of past economic and social processes. These independent determining variables are:

Control and Condition Variables:

ABCD: dummy variables for whether a district in development levels ABCD was included in the sample for the year (for some years a district from each class was included, in other years this was not the case)
PCTRUR: the proportion of rural households in the sample
AVEINCOME: the estimated average of sample households incomes

Non-Price Variables:

URBA	: Percent of the state's population in urban areas
DOCS/C:	: Doctors per lakh (100,000) population
PGIRRA	: Percent of gross cropped area that is irrigated
IRRXCNL	: PGIRRA times percent of irrigated area from canals
PELEC	: Percent villages with electricity
TAXES	: Agricultural taxes per ha.
EDUCWR	: Education of women aged 25 to 35 years in rural areas
HYV	: Percent cropped area planted to high yielding varieties
MMB/POP	: Midday meal program beneficiaries/lakh (100,000) population
IRDP/POP	: Integrated rural development program beneficiaries/lakh (100,000) population
FDS/POP	: Foods distributed (fair price shops)/lakh (100,000) population
NEX/POP	: Expenditures on all nutrition programs/lakh (100,000) population

Price variables

PRC/FLWG: Farm harvest price of rice/male field labor daily wage
PWH/FLWG: Farm harvest price of wheat/male field labor daily wage
PJR/FLWG: Farm harvest price of jowar/male field labor daily wage
PGR/FLWG: Farm Harvest price of gram/male field labor daily wage

Tables 11 and 12 report the results. The trend estimates reported are from the analysis in Section 2 summarizing these data. A trend variable was not included in the regressions summarized here. Coefficients with a single

Table 11 Determinants of Food Consumption NNMB State Data

Independent Variables	Cereals	Pulses	Leafy Veg	Other Veg	Roots Tubers	Nuts Oilseed	Spices	Fruits	Meat	Eggs Fish	Milk	Fats	Sugar
Trend	-4.69	-4.01**	3.19*	-.73	-6.52	-1.24*	-.31	-1.38	-.49	.24	-2.74	.39	1.72**
URBAN	.25	- .32**	.086	.34*	- .31	- .03	-.07*	.18	-.08	.01	-1.48**	-.12**	-.24
DOCS/C	- .92	- .42	-.06	-.31	-3.78	- .59	-.25	- .50	.48	.18	2.53*	.02	-.05
PGIRRA	- .48	- .30*	.88	.40	- .13	.02	.004	- .04	-.004	.02	.16	-.02	.09
IRRXCNL	.001	.006*	-.000	-.009	.000	- .007	.000	.00	.00	-.00	- .00	.00	-.00
PELEC	-1.15	- .71**	-.10	.118	2.02	.06	-.215*	- .07	-.24	-.04	-1.95**	-.02	-.14
TAXES	.44	.31	-.18	.45	.31	.18	-.069	.38	- 10	.05	-1.21**	-.11*	-.15
EDUCWR	.09	- .00	-.03	-.08	- .37	- .04	-.006	- .04	.00	.02*	- .11	-.00	.00
HYV	-1.09**	- .264*	-.18	.088	-1.42	.12	-.05	.08	-.12	-.08**	.47	.04	.07
MMB/POP	-31.1	4.74	58.2**	25.3	.98	6.47	10.55**	1.2	11.3	.37	117**	11.5**	34.2**
IRDP/POP	337.9*	119.88**	3.5	40.9	120	14.49	13.33	52.6	10.1	-.52	-106	-12.7	-29
FDS/POP	2.78	3.71	1.9	5.7	5.6	.86	1.51*	2.45	2.0	.95	-2.7	-.57	.5
NFX/POP	1.05	4.77	.45	-2.5	26.7	-1.27	-.73	-2.74	-.92	-.29	.23.1**	-2.6**	-.12
PRC/FLWG	-11.2**	-.11	-.63	-2.9	-13.2*	.95	.23	-1.68	.11	-.19	7.3**	.99**	1.9**
PJW/FLWG	13.3**	-.81	.71	2.8	6.5	-.91	-.07	1.89	-.03	-.05	-4.5*	-.97**	-1.6**
PWH/FLWG	-2.27	1.29	1.82	-.20	-2.6	-.01	-.06	.01	-.13	.18	-.25	-.07	.07
PGR/FLWG	4.3**	.51	-.86	-.93	6.3*	-.30	.00	.13	-.06	.02	-4.6**	-.34**	-.62**
R^2	.984	.942	.923	.944	.882	.983	.978	.866	.968	.902	.978	.977	.971

Table 12: Determinants of Nutritional Status NNMB State Data

	Deficiency			Percent with no Deficiency Signs					Gomez Undernutrition				Infant Mortality	
	PC	PPCM	INF	PS	M512	F512	M1221	F1221	BM	BS	GM	GS	IMU	IMR
Ind. Variables														
Trend	-54.2	230**	.79*	-2.78	-4.58*	-4.54*	1.03	.68	-.113	-2.53**	-.73*	.025	-2.03**	-2.26**
URBAN	-3.08	24.9**	.09*	-.19	.27	-.32	-.13	.10	.086	-.02	-.153**	.133	-.04	.06
DOCS/C	14.16	-23.2	-.01	-.97	-.95	-.98	-.02	.77	.182	.16	-.044	-.023	-.66**	-.72**
PGIRRA	.92	-1.4	.27**	-.29	-.17	-.21	-.20	-.16	-.091	-.103	-.467**	.000	-.06	-23**
IRRXCNL	-.00	.00	-.0005**	.00	.00	.00	.000	.00	.002	.002	.001**	.094	.00	.005**
PELEC	16.50	-6.80	-.266*	-.08	-.21	-.13	-.08	.18	.316*	.04	.186	.102	.16	.08
TAXES	-3.73	1.06	-.065	.42	-.02	-.03	.16	.05	.076	-.057	.161	.012	-.001	.09
EDUCWR	-127	-3.17	-.007	.02	.05	.05	.00	-.02	-.005	.0006	-.019	-.063	-.0006	.01
HYV	-.60	19.4*	.160**	-.23	-.38	-.43	.05	.07	-.069	-.121*	-.050	-13.02**	-.06	.02
MMB/POP	460	1018	17.3**	-18	-.24	-28	-6.7	-5.3	-27.14**	-9.32*	-25.55**	16.69	4.7	-1.1
IRDP/POP	-66.4	194	-1.39	448**	334**	336**	74.8*	76.7*	4.61	25.0	80.55**	.192	-1.1	12.0
FDS/POP	-94.3	-148	-.22	-102	-6.3	-6.1	-.4	-1.4	1.09	.235	1.51	2.092	-.64	1.32
NEX/POP	-35.0	-204	-2.58	6.77	5.79	8.3	-.11	-1.8	5.30**	1.01	2.49	-.479	.29	.15
PRC/FLWG	12.4	-83*	.84**	.40	.93	.85	.02	.21	-1.04*	-101*	-.63	.474	-.31	.18
PJW/LFWG	-3.66	87	-.08	1.06	.85	.79	-1.18	1.24	.90*	.44	1.03*	.012	.54	.33
PWH/LFWG	72.1	-.77*	.28	2.71*	2.09	2.0	1.17	-.80	-.67	.20	-.22	.51	.17	-.24
PGR/FLWG	-49.9*	43	-.69**	-2.76**	-2.92**	-2.72**	-.05	-.12	1.06**	.18	.421*		-.15	.26
R^2	.897	.884	.893	.911	.877	.782	.749	.719					.990	.996

asterisk (*) have a "t" statistic between 1.5 and 2.0. Those with two asterisks (**) have a "t" statistic greater than 2.

These results should be interpreted with considerable caution. There are possible simultaneity problems with some of the public program variables. Most coefficients are not statistically significant, although the fact that they are not may be of interest. It is perhaps best to interpret the patterns of coefficients rather than to attempt conventional statistical interpretations.

I will attempt to interpret Tables 11 and 12 together. I will discuss effects by independent variable. Note that the consumption trend analysis showed declines in the consumption of pulses and nuts and oilseeds and an increase in sugar consumption. The trends showed an increase in calorie deficient households, decreases in the percent of children 5-12 years with no deficiency signs, decreases in children with moderate and severe Gomez weight for age ratings and decreases in infant mortality.

The urban variable shows that more urbanized states tend to consume less pulses, spices, milk, fats and sugar and more leafy vegetables. They also have more calorie deficient but protein adequate households and a higher percent of infants with deficiency signs. This variable does not affect other status indexes.

The two variables PGIRRA and IRRXCNL are designed to see whether investments in irrigation have impacts on food consumption and nutritional status in addition to effects that they might have on prices and rural wages. I am treating the percentage of canal irrigation as an index of the size of the irrigation "grant" component. Farmers installing tubewells tend to pay for at least part of the costs of installing and maintaining the system. Large canal systems tend to be financed primarily by grants from the taxpayer to the farmers. Our data show that these variables have little impact on food consumption. The only marginally significant impact is that non-canal systems reduce pulse consumption while systems with a high canal component do not.

Irrigation does appear to have some impact on the nutrition status variables. No effect on calorie deficiency is observed. States with high levels of irrigation do appear to have lower infant deficiency signs, lower Gomez undernutrition and lower infant mortality rates. All of these effects are offset or mitigated by high percentages of canal systems. This pattern suggests that the grant component of irrigation is not used to improve health status. (It could reflect decisions as to where to install canal systems and it could reflect problems of water distribution in canal systems). More detailed data are required to pursue this further. Rural electrification (PELEC) is associated with lower pulses, spices, and milk consumption, but not with calorie deficiency signs, it is associated with worse Gomez ratings. In general, it does not have a large impact.

Agricultural taxation has little impact except to reduce milk consumption. The education of rural women, somewhat to my surprise, has little impact on food consumption or nutritional status. Agricultural technology as indexed by the HYV variable is associated with reduced cereal and pulse consumption and a higher incidence of calorie deficiency. In spite of this, it has a small, positive effect on infant deficiency signs and severe Gomez

ratings.

The remaining non-price variables, DOCS/C, MMB/POP, FDS/POP and NEX/POP are public program variables and have to be interpreted with even more caution than other variables since there is the possibility that the programs investment levels may respond to nutritional status conditions. This is particularly likely in the case of nutrition program expenditures (NEX/POP).

The supply of doctors has little impact on food consumption, except to stimulate milk consumption. Its only further association is with reduced infant mortality.

The midday meal program does appear to stimulate the consumption of leafy vegetables, spices, milk and sugar, but does not impact on calorie deficiency. It does impact favorably on infant deficiency signs and on Gomez ratings.

Food distribution programs stimulate cereals consumption but have no nutritional status effects. Nutrition expenditures also share little association with consumption or nutritional status.

Some price effects emerge in the data. High prices for rice discourage cereals consumption and encourage milk, fats and sugar consumption. The opposite is true for high prices of pulses. High farm rice and wheat prices generally lead to lower calorie deficiencies and better Gomez ratings. Rises in farm wages have the same effect.

2. Reduced Form Analysis of District NNMB Data

For the years 1978, 1979, and 1980, NNMB district level data on foods consumed per capita and nutrient intake per capita are available. At the district level prices can more legitimately be regarded to be exogenous variables than at the state level. This reduced form can be regarded to be primarily a demand model. For these district data, food consumption and nutrient intake are available by the following per capita income classes:

1. Daily income 1 - 2 rupees
2. Daily income 2 - 5 rupees
3. Daily income 5+ rupees

One of the objectives of this exercise is to analyze separately the impact of various variables on consumption for each income class. Implicitly we are holding income constant (to some degree) and identifying the differential impact of the independent variables on consumers at different income levels. I am also analyzing total consumption where income is not held constant.

Tables 13, 14 and 15 report regression estimates of determinants of food consumption and nutrient intake.

The dependent variables in this analysis are foods consumed (cereals, pulses, vegetables, and milk and calorie and protein intake).

The independent "determining" variables measured at the district level are:

Table 13: Cereals and Pulses Consumption: NNMB District Data

Dependent Variables	Cereals Consumption				Pulses Consumption			
	IC 1-2	IC 2-5	IC>5	All	IC 1-2	IC 2-5	IC>5	All
ICDS76	.004	.002	.029**	.005	.002	.005	-.0254	-.003
URBAN	.002	.002	-.001	.002*	.021*	.013**	.002	.013**
LITERACY	-.005*	-.007**	-.008*	-.006**	-.027**	-.038**	-.031**	-.032**
SC/ST	-.002*	.0002	.0001	-.001	-.005	-.005	.013**	-.004
IRRIGP	.00004	.0001	.0001	-.008	-.0033	-.002	-.015**	-.003
IRRxCNL	-.00009*	.000	-.000	-.000	.000	.000	.0002	-.0002
PCPROD	.104**	.083**	.139	.128**	.032	.034	-.283	.103
PELEC	.0003	.002**	.0002	.0006	.005	.005*	.013**	.006**
LGINI	.000	-.0003	-.0003	-.0001	.0001	.0002	.003**	.0004
POPDEN	-.055	.056	.154*	.045	-.248	.018	-.265	-.148
PRC/WGFL	.064	.113	-.27	.072	.191	.013	5.09*	.296
PJW/WGFL	-.711	-1.68**	-1.38	-1.18*	.253	1.66	-2.58	-2.13
PWH/WGFL	.618	1.31**	1.38	.97*	.124	-1.54	-2.11	2.00
R^2	.861	.871	.693	.867	.777	.729	.729	.783

Table 14: Vegetable and Milk Consumption NNMB District Data

	Vegetable Consumption (4)				Milk Consumption (9)			
Dependent Variables	IC 1-2	IC 2-5	IC>5	All	IC 1-2	IC 2-5	IC>5	All
ICDS76	-.014	-.035	.135	-.014	-.024	-.033	.008	-.023
URBAN	-.006	-.007	-.013	-.010	.010	.002	-.024	-.002
LITERACY	.010	-.002	.0005	.012	.024	.0003	.008	.016**
SC/ST	-.004	.001	.011	-.0002	-.026*	-.010**	-.115**	-.011**
IRRIGP	-.001	.006	.006	-.005	-.008	.0003	.011	-.0016
IRRxCNL	-.000	.000	.0007	.000	-.000	.003	.0008	-.0001
PCPROD	.013	-.229	.618	.203	.325	.004	1.65**	.356**
PELEC	-.006	-.002	-.007	-.005	.033**	.001	-.043**	.0055*
LGINI	.005**	.004**	.014*	.004**	-.002	.0006	.0054	.002**
POPDEN	-.173	.029	2.28**	.411*	-.307	-.491**	-.763	-.444**
PRC/WGFL	.653	1.06*	6.78	1.20*	.757	.807*	11.8	1.07
PJW/WGFL	3.10	5.76*	6.88	10.16**	-11.9	5.54**	-10.22	.93
PWH/WGFL	-3.95	-7.07**	-25.57	-11.06**	10.3	-5.96**	-2.75	-1.97
R^2	.602	.587	.547	.608	.548	.815	.644	.898

Table 15: Calorie and Protein Intake: NNMB District Data

	Calorie Intake (37)				Protein Intake (36)			
Independent Variables	IC 1-2	IC 2-5	IC>5	All	IC 1-2	IC 2-5	IC>5	All
ICDS76	.0007	-.0065*	.0161**	-.002	.0040	.0003	.0144*	.002
URBAN	.0003	.0012	-.003*	.0014*	.002*	.002	-.003*	.003**
LITERACY	-.001	-.003*	.004	-.0026*	-.003	-.004*	.004	-.004*
SC/ST	-.001	-.0006	.0053**	-.0014*	-.002*	-.001	.006**	-.002*
IRRIGP	.0003	-.00004	-.0022*	-.0002	-.0007	-.001	-.005**	-.0013*
IRRxCNL	-.00012**	.00002	-.00008	-.0001**	-.0001*	.000	-.000	-.0001**
PCPROD	-.011	.005	.018	.0084	-.0015	.025	.043	.016
PELEC	.0009	.00014*	-.0006	.001*	.0014	.0015	.0002	-.0014*
LGINI	.000	-.000	.0002	.000	-.0002	-.0003	-.0002	-.0002
POPDEN	-.0061**	-.015	-.039	-.039*	-.138**	-.050	-.062	-.109**
PRC/WGFL	-.53	-.33	-.61	-.843**	-1.28**	-.036	-.674	-1.119**
PWH/WGFL	.37	.0001	-.215	.559*	1.17**	-.209	.044	.95*
R^2	.807	.799	.602	.813	.786	.688	.592	.780

Control Variables

State and year dummy variables are used to control for general measurement and taste effects.

Non-Price Variables

ICDS76:	The number of ICDS program blocks in the district at the end of 1979. Most of these were instituted in 1975-76. (Note data on other programs MDM public food distribution, etc. were not available at the district level).
URBAN:	The percent of the district population in urban areas, 1981.
LITERACY:	The percent of the population over age 15 years literate, 1981.
SC/S/T:	The percent of the population in scheduled castes and tribes, 1981.
IRRIGP:	The percent of gross cropped area irrigated, 1977.
IRRXCNL	IRRIGP X percent irrigated by canal.
PCPROD:	Per capita foodgrain production (average 1977-80).
PELEC:	Percent villages with electricity.
LGINI:	Gini ratio of cultivated land distribution in 1971.
POPDEN:	Population density - rural population per cultivated area.

Price Variables

PRC/WGFL =	Farm harvest Price of Paddy/Male Field Labor Wage
PJW/WGFL =	Farm Harvest Price of Jowar/Male Field Labor Wage
PWH/WGFL =	Farm Harvest price of Wheat/Male Field Labor Wage

As with the state NNMB regressions of the previous sections, the patterns are of more interest than specific coefficients. They are best discussed by independent variable. The income class specific regressions should be interpreted by comparing them to the total regressions. Note, however, that the regressions for all households do not hold income constant while the class specific regressions do to some degree. The dependent variables are in logarithms so the coefficients can be interpreted as percent changes from a one unit change in an independent variable. The least squares regressions are "weighted" by the number of households in each class.

The only food program variable available was the ICDS76 measure and this is not very adequate since very few blocks had instituted programs in advance of the survey dates. The fact that we find little effect (except in cereals and calorie-protein intake in the highest income class) may be due to this.

Higher levels of urbanization in districts appear to stimulate cereals and pulses consumption in the lower income households. This increased consumption is reflected in increased calorie and protein intake in poor households. Higher urbanization appears to reduce calorie and protein intake in the highest income households.

Higher literacy levels are associated with a shift away from cereals and pulses consumption in favor of milk consumption.. The net impact on calorie and protein intake is negative.

High proportions of scheduled caste/scheduled tribe members of the population are reflected in lower food consumption, especially of milk. This

is further reflected in lower calorie and protein intake in the poor households.

Irrigation investment has small negative impacts on calorie and protein intake with no large income class biases. The proportion of canal irrigation has a further negative effect (consistent with the results of the previous section).

High per capita foodgrain production appears to stimulate higher cereals consumption and high milk consumption (for high income households). This is largely a shifting effect because calorie-protein intake is not affected.

Higher levels of rural electrification are associated with higher cereals, pulses and milk consumption. This is reflected in higher calorie and protein intakes.

Unequal distribution of land is associated with higher pulses, vegetables and milk consumption. These effects are biased in favor of high income households.

Population density is associated with higher cereals consumption and lower vegetable and milk consumption. The net effect is that both calorie and protein intake are reduced in the poorest households by high population density. (This is consistent with the BEQG model).

The price variables show that higher prices of rice stimulate cereals, vegetables and milk consumption. This is reflected in higher calorie intake and is probably biased in favor of the poor. This effect is primarily a farm income effect and indicates that many rural households are net exporters of rice. Hence, they gain more as producers than they lose as consumers from a price rise. This is true to a lesser extent for wheat prices. The effect of jowar prices is in the opposite direction and reflects the impacts of high prices on consumers.

3. Summary Comments: Reduced Form Estimates

The reduced form estimates reported here have identified few strong program impacts on consumption and nutritional status. I have already noted that this approach is beset with possible econometric problems not fully dealt with here. Nonetheless a number of effects appear to be showing up in spite of these difficulties. The midday meal program impacts, for example, appear to be important. It should be acknowledged, however, that some programs designed to have an impact on consumption and nutritional status may not, in fact, have an impact. Rural development projects are a case in point.

There is considerable scope for further analysis of state NSSO data and of NNMB data as well using this methodology. With further work some of the simultaneity biases associated with program responsiveness may be corrected. Such work requires more resources than available in the present project.

III. Policy Issues: Food, Nutrition and Agriculture

During periods of aggregate food scarcity, e.g., during droughts, many observers tend to associate diminished food intake directly with food scarcity. During periods of food "surplus" both in a given country (as in India today) and internationally (as is also the case today) these observers are puzzled that more food is not being consumed in view of the evidence that the food intake of large numbers of people is "inadequate" by many standards.

These observers fail to appreciate the fundamental laws of micro-economic behavior and accounting. Each household has only so much income (some of which may be in kind, i.e., in foodgrains or other goods). Food and non-food items have prices or costs. (This is true even though the items may be home produced). The "iron law of accounting" states that in the long run a household cannot spend more than its income. Thus if food prices decline (because of increased productivity in India and in other countries) and incomes do not change, a household will increase its consumption of food and non-food items. But for poor households, even a substantial drop in prices will not assure that its increased consumption will enable it to achieve dietary adequacy.

When we consider the effect of a given agricultural production change on the consumption of a typical household, we need to ask two questions. First, how did the change affect the household's income? Second, how did the change affect the prices or scarcity values of the items consumed by the households?

In the case of a localized drought (as in Gujarat, Maharashtra and other parts of India at present), the effects on farmer and farm laborer incomes can be quite severe. These farmers have suffered an income reduction because of the drought. If India did not have substantial grain stocks on hand, food grain prices would probably rise substantially -- even with food aid and increased imports (as in the 1965-66 drought). The availability of these stocks in India thus partially alleviates the problem for drought stricken regions because prices have not risen. But it remains the case that income losses in the affected region lead to reduced consumption.

Wheat farmers in the Punjab-Haryana region are enjoying a good crop. The willingness of the GOI to accumulate and hold substantial stocks of wheat and other foodgrains (abetted by the drought in other regions) produces wheat and foodgrain prices generally that are higher than they would be in the absence of such price support. These wheat farmers are thus doing well. Consumers in India, however, would benefit from lower foodgrain prices.

India has achieved its present foodgrain situation because of effective public and private investments in the agricultural sector. Substantial investments in irrigation have been responsible for some of the gains. The key gains have been made via improvements in crop productivity, particularly in wheat and rice and to some extent in coarse cereals (but not in pulses and oil-seeds). The real costs of producing a unit of these commodities has fallen. Prices, in spite of substantial intervention in markets by the GOI, have tended to reflect these cost reductions. Over the past 15 years or so, foodgrain prices have thus fallen relative to non-food prices. At the same time, farmer and farm labor incomes have shown substantial regional variations (as with the current drought) but have not fallen relative to prices in general.

The chief manifestation of India's generally good agricultural performance is that the fall in foodgrain prices has meant that the real incomes of foodgrain consumers have gone up. This effect has been generally progressive and has affected urban and rural consumers alike. It has produced an arrest in the declining food consumption position of consumers in India. This effect has not be universal because of regional income variations.

It is also important to note that the favorable agricultural performance has not fundamentally altered the nature of the poverty-undernutrition problem in India. Some improvements have taken place and it is of great importance that the decline in average food consumption has been halted. But for millions of low income people in India, income levels are too low to provide dietary adequacy even if food prices were to fall further. The percentage of the population in the poverty-food inadequacy class (by any of a number of definitions of poverty) has probably not fallen in recent years.

It is useful to assess the recent evidence for production improvement against the historical record. During the 1950s and the 1960s, the Indian economy realized small gains in productive efficiency in both the agricultural and industrial sector. Employment in the industrial sector grew slowly in spite of large capital investment. High levels of protection and regulation were factors in this poor performance. In spite of large expansion in employment in the government and service sectors, the non-agricultural economy was not "pulling" very much labor from the agricultural sector. The consequence of this general performance shows up in the declining household consumption in the NSSO surveys for this period.

The 1970s and early 1980s have seen a major improvement in the performance of the agricultural sector, but not of the industrial sector. The agricultural sector performance is now a "push" factor in the labor market, and will probably continue to be in the near future. If the non-agricultural sector does not improve its employment demand performance considerably (and at present it shows little inclination to dismantle its costly regulatory, bureaucracy-hampered industrial policies or to open up more sectors to competitive pressures from abroad) the end of the period of agricultural scarcity will have severe consequences for agricultural laborers and for farmers in general. This will be made all the more serious by the international "glut" of foodgrains in world markets that are likely to characterize these markets for a number of years. It will not be easy for India to develop large agricultural export markets in these circumstances.

It is clear that the gains of the 1970s and 1980s in agriculture have been important and that they have arrested a serious downward trend in consumption. It would be tragic for India to lose ground in agriculture and return to a 1950s scenario. The agricultural gains have lowered the real costs of industrial expansion and growth. Laborers can move out of the agricultural sector in large numbers without jeopardizing the food security of the country. Rural markets for industrial goods have expanded. Will India move forward aggressively to realize the 9 to 10 percent growth in industrial employment that its investment levels should be producing? If it can, it will be on a sustained development path.

I would not expect major gains in the industrial employment picture in the near future, however. This will mean that the demand for labor in

agriculture will be constrained by relatively inelastic demand for agricultural goods. India will probably continue to produce surpluses and will be searching for ways to distribute these surpluses. Its surplus position is still quite fragile, however, and could be lost if a strong production investment strategy in agriculture is not maintained.

This study has shown that the welfare of poor people in India has been affected by a number of policies not directly associated with agricultural productivity. The foodgrains distribution system appears to have resulted in significantly lower prices for poor families (although some of this is a food quality difference). Nutrition education and supplementary feeding programs have probably made a difference. Community and public health programs can play a major role in determining health status. A number of programs appear to have impacted on nutrition and health status even though they have not altered food consumption.

India has "experimented" with a broad range of programs in rural communities. Many of these programs fall into the general rural development or integrated rural development category. In spite of what appears to be high levels of confidence on the part of the designers and administrators of these programs that they have been effective, the fact is that many such programs have not been effective. There is precious little solid evidence that many of these programs have made a difference where it matters, i.e., in food consumption, nutrition, health and fertility. Many "evaluations" treat "inputs" as though they were "outputs". The "beneficiaries" noted in Indian statistics (as with IRDP beneficiaries in the Seventh Plan) may or may not have benefited in any meaningful way from these programs. The real test is not whether they participated or were contacted, or took advantage of free and subsidized goods, but whether they gained in real income, consumption and health.

In a setting where many existing programs have uncertain outcomes and where programs are being redesigned and changed in an attempt to realize more impact and effectivenesses, aid agencies such as USAID can play a highly constructive role. They can provide support and in some cases technical assistance to selective programs that have a clear "experimental" dimension. These programs are not experimental in that they engage in expermentation with human subjects, but they do constitute "institutional" experiments. Many of the improvements in governmental program intervention are realized through a "trial and error" process rather than through a *priori* design. Thorough and unbiased evaluation of program effectiveness is critical to the institutional improvement process. USAID can facilitate this process not only through support of institutional experiments but through support of their evaluation as well.

The GOI has clearly shown its commitment to achieving improvements in food consumption, health and nutritional status. It has the capacity to administer effective programs and to evaluate and redesign them. USAID support in this field will be effective because of the GOI's commitment and capacity. The problem is massive and selective support to assist child feeding, maternal health and related programs and to evaluate them to aid institutional improvement will have a high pay-off. It should be a large part of USAID's portfolio in India.

Support for institutional improvement in a relatively advanced governmental program setting is demanding in ways that support in less advanced governmental settings is not. Improving a program can be more challenging than initiating a program.

The agricultural production policy setting in India at least for the near term will probably change the perspectives on food distribution policy. In the past, India has pursued a fair-price system designed to aid low-income largely urban consumers. Procurement has generally been a major problem and various schemes to facilitate procurement have been used. With an increase in production and the cumulation of stocks this has changed, at least for the near term.

The GOI will probably now begin to reconsider its position toward food aid, particularly PL480 Title II food aid. It will probably wish to press for changes in the form of this food aid and possibly in the level of aid. It may wish to expand its own fair-price scheme to increase the demand for its own grain and possibly to engage in more food aid from its own stocks.

This is probably an important period for expansion of effective food aid in India. Programs to achieve effective targeting of such aid to specific groups will be pursued. It is an important period for institutional efficiency gains. Evaluations of existing programs could be supported by USAID and can provide valuable guidance. Maternal and child health programs and school lunch programs will be expanded.

U.S. policy interests in providing particular types of food aid may come into conflict with GOI policy interests. The GOI is recognizing the political power of farmers (though the support for wheat farmers in North India has other ramifications) and is currently unwilling to let foodgrain prices decline. The level and content of U.S. food aid will probably change somewhat.

Agricultural production policy remains of high importance - after all, it is the proven success area of the past decade or so. The weights should shift, in my judgment, away from irrigation, especially large scale projects with little innovation, to technology and marketing policies. Studies of pricing and surplus management and related food distribution strategies are of very high importance because India now has genuine surplus to distribute. There are possibilities for innovative programs- food for work type programs, etc., here. The further development of food processing industries, notably in dairy production and fruits and vegetables, offers opportunities for innovative programs.

Household policy, especially nutrition and health education and schooling opportunities for women are also of high importance. Home production is probably as valuable in India as farm production when valued properly and there is a technology and management dimension to it. India probably underinvests in technology improvement and management training in the home. The health and nutritional status of children is affected by home management.

The present study did not, by any means, identify the critical program impacts and their policy impacts. It was very limited in scope and resources. Its primary purpose was to identify the major trends in consumption and to

interpret them in light of general income and price changes. The effort to associate government programs and other variables with consumption and nutritional status requires much further study. In the present policy setting more knowledge of these effects will have high value.

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Appendix 1: Review of Indian Studies

A large number of studies based on NSSO data have been undertaken to date. Only one report in addition to Annual Reports of the NNMB has been based on the NNMB data. I have attempted to group selected studies for review into several groups: 1) those concerned exclusively with consumption; 2) those using consumption data to analyze poverty; 3) those concerned with consumption and nutrition; and 4) those concerned with consumption, poverty and production as related variables. (An extensive bibliography prepared by Dr. Saroj Gupta is appended to this report).

A. Consumption Studies

A. Biswa (1959) reports one of the first studies based on NSSO data and computes value and quantity income elasticities.

P.C. Bansil (1961) provides a review of consumption data from a number of studies conducted prior to 1958 and compares these with food availability data. He finds that the consumption survey data indicate higher consumption levels than do the production availability data. Bansil uses the Biswas elasticity estimates in one of the earlier attempts to reconcile different data sources.

Chatterji (1962) reports an early economic study of price and income elasticities based on the NSSO data (2nd - 7th rounds). Battacharya (1967) estimates a Linear Expenditure System. Roy (1979) estimates an Almost Ideal Demand System and Binswanger and Swami (1984) estimate a general flexible demand system continuing this econometric tradition using NSSO data. Biswas and Biswas (1961), Iyengar (1967), Iyengar and Jain (1973), Jain (1977) and Murty and Shah (1978) among others, have made econometric estimates of Engel relationships and household composition effects with NSSO data. Patel and Patel (1976) estimated an aggregate consumption function.

The tradition of comparative studies over time and across states has now become strong. Choudhury (1966) analyzed trends for 1953-54 to 1960-61. Sharma and Roy (1979), George (1979) and Ahluwalia (1978 and 1986) have continued these analyses for later rounds. Desai (1962), Mukherjee and Chatterjee (1972), and more recently Vaidyanathan (1986), Mukherjee (1986) and Suryanarayan and Iyengar (1986) have examined the "reliability" of NSSO data by comparing these data with CSO estimate of food availability. These comparisons show that NSS data in recent years show lower consumption than the CSO data show. (Roughly 12 to 13 percent lower for the 27th and 28th rounds). In spite of these discrepancies, it remains true that the NSS data provide a direct estimate of consumption while the CSO data are very indirect.

Sharma and Roy (1959) and George (1979) report that NSS data show a decline in average per capita foodgrain consumption of 10% between 1964-65 and 1973-74. For the lowest expenditure quartile, however, there was no decline in cereal consumption (in fact there was a slight increase in rural areas) while the highest expenditure quartile registered a significant decline (more than 16 %). George (1979) attempted to determine consistency between income and price data and the decline in average consumption of cereals. He noted that cereal grain prices rose more rapidly than other food and non-food prices during the 1964-65 to 1973-74 period and that they generally rose more rapidly in rural areas. He

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concluded that this relative price rise was responsible for much of the decline in cereal consumption. The price changes not only meant that cereals were more expensive relative to other foods and non-foods, but that the rise in prices had a strong negative income effect. The quartile differences were only partially explained by prices and relatively high income elasticities, leaving the inference that the public distribution of foodgrains succeeded in preventing a decline in consumption in the lowest quartiles. (This was not backed up, however, by an analysis of expenditure class price differentials, see below).

A recent longitudinal study of income distribution and interclass mobility (NCAER 1986) also reported comparative data for the 1970-71 to 1981-82 period indicating a 4% improvement in average per capita food consumption over the period. These data are very preliminary.

Numerous other consumption studies have been carried out in India. A recent study from ICRISAT provides data for 6 villages in southern India (ICRISAT 1984). A study of Food Habits in Gujarat and Maharashtra (Protein Foods Assn. of India 1969) provides data on motives for food purchases and on many types of foods and food transactions.

B. Poverty Studies

It was quite natural that the NSSO data on consumption should be used to measure poverty and malnutrition. Total expenditures in each round can be regarded as reasonable measure of income and the NSSO data provided a basis for comparing both the levels and the distribution of incomes over time and across states. Gupta (1961) provides an early comparison of expenditure distribution by state. The major impetus, however, to the poverty studies was provided by the Dandekar-Rath study in 1971. Dandekar and Rath (1971) defined a poverty level and reported estimates of the proportion of the population in poverty. Nutritional adequacy was introduced as a poverty indicator and the agricultural labor household was identified closely with poverty.

The Dandekar-Roth study stimulated a number of criticisms and extensions, many of which are collected in the Srinivasan - Bardhan volume (Srinivasan and Bardhan 1974). Interestingly, the strong association of landlessness or near landlessness with poverty in rural areas that Dandekar-Rath established was not critically examined in these studies. (See Minhas 1974). The recent NCAER study suggests a weaker association than presumed by most writers in the field. Bardhan (1974) extended poverty analysis in a number of ways, particularly in the use of cross-section data and in pioneering the econometric or statistical association of poverty with variables characterizing policy and technological environments. He also introduced the Consumer Price Index for Agricultural Laborers (CPIAL) as a more appropriate deflator for expenditures than the wholesale price index.

Choudhury (1977) and others continued analyses of further NSSO rounds as they emerged. Ahluwalia (1978) provides an extensive review of poverty estimates. He follows Bardhan in using the CPIAL as a deflator and defines poverty by state for the 1957-58 to 1973-74 period. He does not find a strong overall time trend in poverty, but does find substantial state differences. He identifies an inverse relationship between rural poverty and agricultural NDP per capita. He suggests that a strong agricultural growth performance probably

reduces poverty, but that other factors tend to increase it so that the absence of an overall trend in poverty is consistent with a relatively strong agricultural growth performance.

Dharm Narian pursued the links between poverty and agricultural performance in several studies. His death occasioned a volume collecting recent work on the topic (Mellor and Desai 1986). This volume contains a number of analytic and empirical contributions. Several of them are concerned with testing the proposition put forth by Narain that relative prices as well as nonprice factors in agricultural productivity growth impacted on rural poverty. He explored a specification in which both the CPIAL and NDP per person in agriculture were determinants of rural poverty. Several contributors to the volume (including Ahluwalia who reports the only comparative data from the 1977-78 (32nd round)) supported this specification.

This "povertyology" literature, while quite interesting, particularly in terms of measurement of poverty (Sen 1986) nonetheless is not based on a solid micro-theoretical foundation. Srinivasan (1986) provides a highly restricted model of poverty but most authors do not ground their specifications on either the basic micro theory of household behavior (including consumption) or on a general equilibrium specification. Until recently the general equilibrium models literature did not have a strong distributive dimension. The primary concern with these models was to estimate or predict changes in equilibrium prices and quantities in response to a policy change of "shock". Recent versions of general equilibrium models are not converting these changes in prices and quantities (including employment of labor) into real income changes for specified population groups. Binswanger, Quizon and Gupta (1974) provide such estimates for Indian agriculture. Their model links agricultural policy variables (Research, HYV's, Rural Electrification, Irrigation) to poverty by calculating real income effects for landless laborers, small, medium and large farmers and for urban households.

C. Poverty, Consumption and Nutrition

The poverty studies in India were at least partially based on a poverty line defended on "nutritional adequacy" grounds. This heightened the ongoing debate regarding what nutritional adequacy really means. This debate began as an attempt to bring more "science" to "recommended daily allowance" (RDA) figures and more particularly to their use to convert survey data such as the NSS data into measures of numbers of hungry and malnourished.

A debate initiated largely by Sukhatme (1972) has made an important point by showing that there is a "range" of dietary intake that may be considered adequate among adults depending on activity levels, climate, etc. This line of analysis has effectively shown that early claims as to number of malnourished (FAO, Reutlinger and Selowsky 1976) were overstated. (While not always admitted, this overstatement served a political purpose in that organizations concerned with health and nutrition policies ostensibly benefited from the overstatement of health and nutrition problems). Recent literature regarding children and nutrition has degenerated into the "small is health" discourse. The proponents of this perspective agree that limited dietary intake during critical growth phases does result in smaller body stature and generally lower adult height and weight because of the adaptive mechanisms of body growth. They question, however, whether there is any evidence that a moderate reduction

in ultimate body size because of limited dietary intake actually impairs "health" as reflected in morbidity. A multi-country research project funded by A.I.D. is currently underway to elucidate the functional implication of mild and moderate malnutrition.

It is not my purpose in this paper to engage in this debate. In fact, I find myself occupying middle ground on the issues. Organizations engaging in unscientific inflation of malnutrition estimates have deserved the loss of credibility attending this debate. On the other hand, the critics have failed to appreciate the fact that children contribute greatly to family welfare through work of various forms. This contribution is affected by dietary intake. The risk of death increases greatly as the severity of malnutrition increases. This has been documented in several studies (Kielmann and McCord 1978 and Chen, Chowdhury and Huffman, 1980). Further, there is evidence that physical size does matter in work and achievement in later life even if the morbidity and mental proficiency effects of limited intake/reduced size have not been clearly documented.

One interesting line of work suggested by some of the RDA critics is to examine the proportion of total consumption expenditures spent on food (Srinivasan 1985). Rao (1981) points out that the conventional poverty indexes based on a constant rupee expenditure (even when deflated by the CPIAL by states) show little correlation with infant mortality rates or with actual calorie intakes in different states. (Kerala has low calorie intakes and low infant mortality rates. Bihar and Madhya Pradesh have relatively high intakes and high infant mortality.) He then examines PSF (percent spent on food) indexes to determine "deprivation points" i.e., the point where PSF starts to decline as expenditures rise. He then determines average expenditures at the deprivation point and arbitrarily sets a poverty line at 1.5 times this value. He then shows that the poverty line is similar to that used by Ahluwalia (1978) and others. More importantly, he provides evidence that poverty measures based on this concept at the state level are correlated with infant mortality data.

Ramakrishna Rao (1979) provides a general assessment of nutrient intake data for the NSSO 26th round data. V.K.R.V. Rao also investigates these data. His recent book (1982) provides a systematic study of diets in different regions and conditions and urges a National Policy for Food and Nutrition. Shah (1980) and Shah, Sanghani and Surant (1978) have introduced the concept of tastes and choice into the nutrition picture. Many of the writers in this field acknowledge that many diets are inefficient, i.e., not "least cost." Economists, of course, note that food has attributes valued by consumers in addition to nutrient content. The unusual feature of Indian diets from an international perspective, however, is the extent to which they are efficient. Dasgupta (1980) shows that actual diets are not far from minimum cost diets in much of India.

D. B. Gupta (1973) provides a general analysis of consumption patterns and relates these to his earlier work on levels of living indicators (Gupta and Sharma, 1977). More recent nutritional assessments are by Dasgupta (1981 and 1984). Recent National Nutrition Monitoring Bureau data are summarized by Pradhad Rao and Shastri (1986). They report an increase in average calorie intake in India over the 1975 to 1981 period (from roughly 2300 kcals per day to 2400 kcals per day).

D. Nutrition and Consumption Planning and Analysis

The planning literature associated with nutrition and consumption is large. It encompasses the conventional diet recommendations of nutritionists (Devadas, et al, 1974, 1977), nutritional planning models and a range of other studies associating agricultural performance with nutritional and consumption outcomes.

The dietary recommendation studies seek to guide consumers to consume diets that are "balanced" and "efficient." This work provides useful guidelines and is an important input into nutrition education programs.

The nutrition planning literature has in general lacked an appreciation of markets and prices. (See CARE-Orissa 1972 and Dasgupta 1982). The idea that production and consumption should be linked, i.e., that farmers should produce a mix of commodities that mimics a balanced and efficient diet is economic nonsense if efficient markets exist. Much nutrition planning, however, is based on this notion. A related notion that all families should be cultivators and the corollary idea that poverty is well indexed by the degree of landlessness also fails to appreciate the function of markets.
bPerhaps the most basic idea of modern economic theory is that markets enable specialization in production and that an efficient gain is associated with specialization. This is true within national markets, and internationally as well. With well functioning markets a farmer's consumption need bear no relationship to his production. Landlessness need not reflect income. Indeed, even in countries like India most of the highest income families in the economy are urban landless families.

It is true, however, that imperfect markets, as reflected in high transactions costs, limited property rights and direct intervention in markets, forge links between production and consumption. India surely has some degree of market imperfection due to inadequate infrastructure and general literacy, and has also intervened in markets heavily. Its chief intervention has been in the food procurement - food distribution systems in which foodgrains are procured from farmers and sold to consumers (chiefly urban consumers) in fair price shops. Wall (1978) describes the procurement mechanism and shows how prohibition of trade between states and regions enables the system to procure food from surplus states at below equilibrium prices. Thus the highly inequitable zoning system has been necessary to make the supposedly equitable fair price system work.

These distribution policies have been analyzed by Kumar (1979), George (1979), Scandizzo and Swamy (1982), George (1985), Singh (1986) and Viswanath (1985), among others.

Bansil (1961) provides an early assessment of food planning for India in which he works out food requirements for a growing population. More recent examples of food and nutrition planning for India are given in Joy, Payne and Sukhatme (1971), Levison and Call (1971), Sen Gupta (1978), and Mitra (1980). Krishnamurthy (1985) reviews current programs.

More general assessments of agricultural policies are provided in the poverty literature (especially Bardhan, Mitra and Mukherji (1980) and Lipton (1983).

Appendix 2: Methodology

A. The NSSO Data

This analysis is based on the direct estimates of consumption of foodgrains and other articles made available by the National Sample Survey Organization (NSSO) since 1951. NSSO collects information on socio-economic variables on the basis of rounds, each round extending from a few months to over a year, using a stratified multi-stage sampling design. Information on consumer expenditures was collected in all the rounds until the 28th round (1973-74). Thereafter it was decided to collect this information every 5 years instead of annually. The NSS seeks to estimate all expenditures incurred by the household sector exclusively towards non-productive purposes. It includes consumption of home grown produce, gifts, loans etc. Consumption here refers to non-productive expenditures incurred by the household during the reference period of 30 days preceding the date of interview of the household. Data on monthly per capita consumer expenditures are presented by items of food, per capita expenditure classes, for all India and individual states, and for rural and urban areas separately.

Individual states, besides having a proportionate share in the center sample, cover the same schedule for what is known as the state sample. The results of the state sample are tabulated separately.

The NSSO data, though uniform with respect to various concepts and definitions over time, still suffer from a few limitations stated below:

1. Periods of inquiry in NSS rounds range from a few months to over a year. Beginning with the 14th round, i.e., July 1958 - June 1959, the period of inquiry was fixed at one year.

2. The reference period in some of the earlier rounds (2, 3, 4, 5, and 6) was one week. In rounds 4 and 5 information pertaining to a one month reference period was also obtained. A comparison of the estimates indicates that per capita expenditure based on a one week reference period were overstated.

3. The reference period in the NSS rounds is a moving period. The sample households are interviewed at different dates during the period of inquiry. This may produce a seasonality bias.

4. Then number and structure of expenditure classes in NSS rounds change over time. A re-arrangement of classes is required to make the data comparable.

5. Item coverage in NSS rounds changed from time to time, necessitating a reclassification to generate consistent time series data for these items over the study period.

6. Difficult and complicated sampling design adopted by the NSSO renders the computation of standard errors of the estimates difficult. Therefore conventional statistical tests of significance of various estimates are not possible.

7. The NSS estimates of aggregates and distribution are affected by the particular method of consumption valuation. The NSS values consumption out of cash purchases at the actual purchase price, that out of home grown stock at the farm price and that out of barter and transfers at the average retail price. Since the proportion of purchased articles to home grown consumption differs from class to class and year to year, and also prices actually paid by each class, place and year are different, this valuation procedure leads to inter-class and inter-regional price variations. This renders any selected price indexes inappropriate for deflation of these expenditures for inter-temporal comparisons.

8. NSS estimates for the 38th round are based on two sub-rounds, i.e., they are six month estimates and are likely to have a seasonality bias.

B. Methodological Issues

The NSS provides estimates of per capita expenditure by items of consumption and by per capita expenditure classes in every round at constant prices. These expenditures need to be expressed at the same constant prices to be of any comparative use. The procedure of valuation of quantitative consumption is such that the actual recorded prices tend to vary over expenditure classes, states and places. The relative changes in prices of food items, too, vary over the years.

In view of this, the task of constructing appropriate price indexes to deflate these expenditures is formidable. The complications involved have motivated most researchers to bypass the requirement. They instead have preferred to adopt fractile analysis with expenditures at current prices and express the results as the bottom X% of the population incurring Y_1% of expenditures in year 1, Y_2% of expenditures in year 2 and so on. A comparison of Y_1% with Y_2% then provides the required change over time.

This approach is inadequate because of inter-class variations in prices. The relative expenses of the X% of population in real terms are likely to be at variance with its expenses in monetary terms.

We opt to use direct fractile analysis of the NSSO data. Fractile analysis provides a mechanism to regularize the unequal and irregular classes. A realistic, comparative picture over time emerges with the fractile analysis applied to real expenses only. This places an added importance to the formation of appropriate deflators.

1. Construction of Appropriate Deflators

NSS rounds 14, 15, 16, 17, 19, 27, 28 and 32 present per capita expenditure estimates for 8 major cereals, total cereals, pulses and grams by per capita expenditure classes in value as well as in quantity. This information is available for All India Rural and All India Urban estimates. State-wise information of this nature is tabulated for rounds 17, 27, 28 and 32. Based on this information, average and class-wise NSS prices were calculated. On examination, these prices revealed the following types of variations:

1. Price changes over time
2. Price changes over classes
3. Price changes over states including rural urban variations

4. Relative changes over commodities

Price adjustment factors for each of these variations need to be introduced.

Wholesale price indexes in India provide the most consistent and extensive series of indexes. Other available indexes like Cost of Living for Agricultural Laborers and Cost of Living for Industrial Workers are class-specific, place specific and available only for some years. Thus, these are not as appropriate for extensive data like that of the NSSO. Usage of wholesale price indexes as a starting point, therefore, was considered appropriate.

a. Formulation for the Deflators

Let i denote the commodities of NSS data
r denote the rounds of NSS
c denote the per capita expenditure classes
j denote the state i.e. All India Rural = AR
All India Urban = AU, Maharashtra Rural = MR
Maharashtra Urban = MU, Orissa Rural = OR
and Orissa Urban = OU

I_{ri} be the wholesale price index for round r and commodity i on the selected base 1970-71.

R_{jc} be the inter-class ratio for state j and class c and commodity i.

K_{rij} be the ratio of NSS prices to wholesale prices for round r, state j and commodity i.

S_j be the ratio of state NSS prices to All India Urban NSS prices for state j.

Then $I_{rijc} = I_{ri} \times R_{jc} \times K_{rj} \times S_j$ gives the required price indexes.

NSS prices for per capita expenditure classes and average of all expenditure class for foodgrains, cereals and pulses were used to obtain R_{jc}, K_{rj} and S_j.

2. Inter-Class Adjustment Factors

NSS prices of cereals and pulses were observed to increase gradually with the increase in expenditures in both rural and urban areas in all the rounds for which such data were available. The variation was of the order of 30%. These differences are likely to reflect some quality differences of the product. However, much of this variation is real and due to some extent to the fair price system as well as to the willingness of poorer people to search for lower prices. It also reflects the degree of home production in rural areas.

a. Formulation of Inter-Class Adjustment Factors

Let i, the commodities vary over cereals and pulses.
c, the per capita expenditure classes vary over all the classes.
r, the rounds vary over 14, 15, 16, 17, 19, 27, 28 for cereals and 14, 15,

16, 19 for pulses.

j, the state vary over AR and AU

V_{rijc} be the value of expenditure (Rs) on commodity i by class c in round r and state j.

Q_{rijc} be the quantity consumed in kg. of commodity i by class c in round r.

Then

$P_{rijc} = \frac{V_{rijc}}{Q_{rijc}}$ = Price of commodity i paid by class c in round r and state j

$P_{rij\bar{c}} = \frac{V_{rij\bar{c}}}{Q_{rij\bar{c}}}$ = Average price of commodity in round r and state j

$R_{rijc} = \frac{P_{rijc}}{P_{rij\bar{c}}}$ = Ratio of price of commodity i paid by class to average price of that commodity in round r state j.

$$R_{ijc} = \frac{\sum_{r} R_{rijc}}{\text{No. of rounds}}$$

$$R_{jc} = \frac{\sum_{i} R_{ijc} V_{ijc27}}{\sum_{i} V_{ijc27}} \quad i = \text{cereals and pulses}$$

R_{jc} are the inter-class adjustment factors to be used for rounds 2-28 for all commodities. $R_{jc's}$ calculated for cereals and pulses are assumed to hold good for all other commodities, the quantity data for which were not available. Table 2-1 gives the estimated inter-class adjustment factors.

Table 2-1

Inter-Class Adjustment Factors for Rounds 2-28

Per Capita Expenditure Classes	InterClass Adjustment Factors	
	AR	AU
0-80	0.85	0.79
8-11	0.90	0.86
11-1	0.92	0.85
13-15	0.93	0.91
15-18	0.96	0.90
18-21	0.97	0.93
21-24	0.97	0.93
24-28	1.00	0.98
28-34	1.01	1.01
34-43	1.05	1.01
43-55	1.05	1.01
55-75 (55 and above)	1.08	1.10
75-100 (75 and above)	1.07	1.08
100-150	1.07	1.12
150-200	1.07	1.12
200 and above	1.07	1.12
Average of all expenditure classes	1.00	1.00

The level of prices paid by the open-ended class was observed to change substantially when that class was closed and a new open-ended class formed. Therefore an average adjustment factor was worked out for all the classes formed by breaking the earlier open-ended classes.

The class structure of rounds 32 and 38 is altogether different from the earlier rounds. Inter-class price ratios for round 32, therefore, are based on this round itself. For round 38, the inter-class ratios were based on the weighted average of these ratios for the matching classes of round 32. Refer to Table 2-2.

This class price structure is itself of considerable policy interest. We have not attempted to determine the factors responsible for the differences. We do not accept the judgment of other scholars that these prices simply reflect quality differences. We believe that they are dominated by real difference in prices.

Table 2-2

Inter-Class Adjustment Factors for Rounds 32 and 38

Round 32			Round 38		
Exp. Classes	Class Ratios Rural	Class Ratios Urban	Exp. Classes	Class Ratios Rural	Class Ratios Urban
0-10	0.85	0.88			
10-15	0.84	0.88			
15-20	0.86	0.88			
20-30	0.80	0.86	0-30	0.87 (1)	0.88 (1)
30-35	0.93	0.90			
35-40	0.95	0.92	30-40	0.94 (2)	0.91 (2)
40-50	0.99	0.93	40-50	0.99 (3)	0.93 (3)
50-60	1.01	0.96	50-60	1.01 (3)	0.96 (3)
60-70	1.03	0.97	60-70	1.03 (3)	0.97 (3)
70-80	1.03	1.00	70-85	1.03 (4)	1.00 (4)
80-100	1.03	1.00	85-100	1.03 (4)	1.00 (4)
100-150	1.03	1.10	100-125	1.03 (5	1.10 (5)
			125-150	1.03 (5)	1.10 (5)
150-200	1.04	1.10	150-200	1.04 (3)	1.10 (3)
200 and above	1.07	1.12	200-300	1.07 (6)	1.10 (6)
			300 and above	1.07 (6)	1.10 (6)
All Exp.	1.00	1.00	All Exp.	1.00	1.00

(1) Weighted average of the class ratios of round 32 classes 0-10, 10-15, 15-20, 20-30
(2) Weighted average of the class ratios of round 32 classes 30-35 and 35-40
(3) As in comparable classes of round 32
(4) As in class 78-80 and 80-100 of round 32
(5) As in class 100-150 of round 32
(6) As in class 200 and above of round 32

3. Ratio of NSS to Wholesale Prices

On the basis of average NSS prices of cereals, relative price were computed with 1972-73 as the base for every round for which the NSS prices could be computed. 1972-73 was selected as the base for this purpose as price data for the 1970-71 round are not comparable. These relative price were compared with wholesale price indexes for corresponding years with the base of 1972-73. The ratio of NSS prices to wholesale prices was computed for each round for which the NSS prices were computable for rural as well as urban areas. These ratios were used as adjustment factors to wholesale price indexes for the respective rounds. For rounds prior to 14, the ratio of round 14 was used. For the remaining rounds an average of these ratios over all the rounds was used. The ratio of the 1973-74 round was not utilized for calculating this average, the same being quite abnormal.

a. Formulation

Let P^1_{rijc} be the average NSS price for cereals for round r and state j.

$$I_{rijc} = \frac{p^1_{rijc}}{P^1_{28ijc}}$$ Price ratio of average NSS prices of cereals in round to that in round 28

Then, $$K_{rij} = \frac{I^1_{rijc}}{I_{ri}}$$ for r = 14, 15, 16, 17, 19, 27, 28, 32 for all cereals and foodgrains

Where I_{ri} in the wholesale price index for cereals.

K_{14ij} is used for r = 2-13 for cereals and foodgrains

$$K_{ij} = \frac{\sum_r k_{rij}}{\sum_r}$$ for r other than above for cereals and foodgrains

$= K_j$ for all r and commodities other than cereals and foodgrains.
Table 2-3 gives the NSS to wholesale prices ratios.

Table 2-3

NSS to Wholesale Prices Ratio

Rounds	Rural Cereals and Foodgrains	Urban Cereals and Foodgrains
1-14	0.91	0.91
15	0.93	0.95
16	0.93	0.95
17	0.97	1.00
18	0.97	1.00
19	1.01	0.95
20	0.95	0.95
21	0.95	0.95
22	-.95	0.95
23	0.95	0.95
24	0.95	0.95
25	0.95	0.95
27	1.00	1.00
28	1.11	1.10
32	0.91	0.93
38	0.95	0.95
Average	0.95	0.95

(For commodities other than foodgrains)

4. The Ratio of State Prices to All India Urban Prices

To determine the rural urban bias in the NSS prices, All India urban NSS prices were assumed to be closest to wholesale prices and taken as the base. The ratios of all India Rural NSS average prices to all India urban NSS average prices were computed separately for foodgrains and all other commodities including cereals.

a. Formulation

If P_{rijc} is the average NSS price for commodity i, round r and state j;
with i taking values cereals and foodgrains,
r taking values 17, 27, 28 and 32, and
j varying between AR, AU, MR, MU, OR and OU, then
P_{riAUc} is the average NSS price for commodity i, round r and All India urban area.
Then

$$S_{rij} = \frac{P_{rijc}}{P_{riAUc}}$$

$$S_{ij} = \frac{\sum_r S_{rij}}{\sum_r}$$

S_{ij} varying over i are the state adjustment factors. Table 2-4 gives the state adjustment factors.

Table 2-4

State Adjustment Factors

State	Foodgrains	Cereals
AU	1.00	1.00
AR	0.83	0.88
MR	0.90	0.87
MU	0.81	0.88
OR	1.05	1.00
OU	0.96	0.98

5. Procedure for deflation of per capita expenditure on all food items, all non-food items and all items

Per capita food expenditures in real terms were a simple sum of the estimated deflated per capita expenditures of the individual food items. Per capita non-food expenditures were deflated by weighted price indexes of all items and food items.

$$\frac{I_r - .7I_{rf}}{.3}$$

where

I_{rNF} are the price indexes of non-food items
I_{rf} are the price indexes of total of food items, and
I_r are the price indexes of all consumer items

Expenditure ratios on food to non-food items was calculated from NSS data. Per capita expenditures on all items were obtained by summing up expenditures on food and non-food items.

6. Nutrition Estimates

Nutrition estimates were obtained from the per capita expenditures on food items at constant prices following two steps.

(i) The real per capita expenditures in terms of 1970-71 prices of foodgrains, cereals, pulses and other food articles were divided by their respective wholesale prices in 1970-71 to get the quantity estimates. Table 2-5 gives the prices of food items at 1970-71 prices.

(ii) These quantity estimates were subjected to standard conversion factors (Table 2-6) to estimate the per capita intake of calories and proteins. The conversion factor for foodgrains was developed for the weighted average of cereals and pulses consumed in round 15 and applied to foodgrains expenditure estimates of rounds prior to 14.

Table 2-5

Prices of Food Items at 1970-71 Prices

Food Items	1970-71 Prices per kg (Rs)
Rice	1.35
Wheat	1.06
Jowar	0.82
Bajra	0.76
Barley	0.65
Maize	0.68
Ragi	0.65
Sm. Millets	0.68
Grams	1.08
Cereal substitutes	0.68
Cereals[a]	1.14
Pulses	1.56
Milk	1.16
Edible Oils	5.33
Meat, eggs, fish	5.12
Vegetables, fruits	1.11
Sugar	1.97
Salt, spices	0.19
Beverages	0.16
Food grains [a]	1.27

(a) computed by using weights assigned to individual commodities in wholesale price indexes.

Table 2-6

Nutrient Contents of Food Items
(per 100 gram edible portion)

Food Items	Kilo Calories	Protein (gm)
Rice	346	7.5
Wheat	346	11.8
Bajra	361	11.6
Jowar	349	10.4
Barley	336	11.5
Maize	342	11.1
Ragi	328	7.3
Grams	360	17.1
Cereals	338	9.6
Pulses	349	23.3
Foodgrains*	339	10.8
Edible oils	900	0.0
Milk	92	3.8
Fruits and vegetables	69	2.9
Meat, eggs and fish	150	18.0
Sugar	398	0.1

*Weighted average of cereal and pulse calorie and protein content.

Source:

1. Handbook of Food and Nutrition Statistics by Food and Nutrition Board, Ministry of Agriculture, Government of India.
2. Nutritive Value of India Foods, by Gopalan C. Rama Sastri, B.V. and S.C. Balasubramanian; National Institute of Nutrition, 1976.

7. Fractile Analysis

Inter-temporal comparisons of NSS estimates is obstructed by frequent changes in the class structure of per capita expenditures in NSS data. Fractile analysis provides a methodology for conversion to a uniform class pattern. Fractile groups are obtained by arranging the sample households in ascending order of per capita expenditures and then dividing them into a suitable number of groups of equal population size from the bottom. The present study, however, considers the usage of the number of sample persons instead of sample households as a more meaningful variable for a study of per capita expenditures. This study attempts to estimate the proportion of total expenditure, upper terminal value and average value of per capita expenditure by fractile groups. It also attempts to provide these estimates for various subheads like expenditures on food items, total of food and total of non-food. Intake of calories and proteins is also estimated by fractile groups. These estimates are based on general interpolation methods. The formulations in this study are based on a paper by L. R. Jain.

Fractile analysis was pioneered by Professor P. C. Mahalanobis in 1960 using graphs for interpretation. NSS data of rounds 4 - 16 were put to analysis by him. Aibat, Bhattacharya and Gupta (1963) obtained estimates of consumption by fractile groups using interpolation techniques assuming two parameter log normal distribution. Recent attempts by Bastwirth and Glauberman (1976) and Kakwani (1976) were to suggest interpolation methods using a separate continuous differentiable function within each income range which exactly fits the data points instead of assuming a particular density function for the size distribution of total expenditure. Interpolation techniques in their approach are based on fitting a cubic polynomial in each income class. For the first and the last open ended classes Kakwani (1976) used a Pareto curve.

a. Formulations

Let X_{rjc} be the upper limit of per capita expenditure of class c in round r and state j.
Let $\bar{X}_{rjc}$ be the average per capita expenditure of class c in round r and state j.
$\bar{X}_{rj}$ be the average expenditure in round r and state j.

$q_{rjc} = \dfrac{\bar{X}_{rjc}}{\bar{X}_{rj}}$ Ratio of per capital expenditure of class c to average per capita expenditure in round r state j.

$$Q_{rjct} = \sum_{c=1}^{c_t} q_{rjc}$$

Y_{rjc} be the number of households in round r state j and class c.

h_{rjc} be the average size of the household in round r, state j and class c.

$Y^*_{rjc} = Y_{rjc} \times h_{rjc}$ be the number of persons in round r, state j and class c.

Y_{rj} be the total number of sample households in round r and state j.

$Y^*_{rj} = Y_{rj} \times h_{rj}$ be the number of persons in round r state j and class c.

Then

$P_{rjc} = \dfrac{Y^*_{rjc}}{Y^*_{rj}}$ proportion of population in round r and j.

$$P_{rjch} = \sum_{c=1}^{c_h} P_{rjc}$$

P_{rjk} be the selected Kth decile for round r and state j.

Q_{rjk} be the proportion of per capita expenditure for P_{rjk} proportion of population in round r, state j.

to be a class such that

$P_{rjt} > P_{rjk} > P_{rj(t-1)}$

$t \neq 1$ and L (last class)

X_{rjt} be upper limit of class t

$X_{rj(t-1)}$ be upper limit of class t-1

X_{rjk} be upper limit of class k

$\Delta X_{rjt} = X_{rjt} - X_{rj(t-1)}$

$\bar{X}_{rjk}$ = average per capital expenditure class k in round r state j, i.e. class defined as

$$\delta_{rkt} = \frac{\bar{X}_{rjt} - X_{ri(t-1)}}{\Delta X_{rjt}}$$

$$a_{0trj} = Q_{rj(t-1)}$$

$$a_{1trj} = \frac{X_{rj(t-1)}}{\bar{X}_{rj}}$$

$$a_{2trj} = \frac{(3\delta_{rjt} - 1)\Delta X_{rjt}}{P_{rjt} \cdot \bar{X}_{rj}}$$

$$a_{3trj} = \frac{(1-2\delta_{rkt})\, X_{rjt}}{P^{2}_{rjt} \bar{X}_{rj}}$$

$$Q_{rjk} = a_{0trj} + a_{1trj}(P_{rjk} - P_{rj(k-1)}) + a_{2trj}(P_{rjk} - P_{rjk-1})^2 + a_{3trj}(P_{rjk} - P_{rjk-1})^3$$

$$X_{rjk} = \bar{X}_{rj}(a_{1trj} + 2\,a_{2trj}(P_{rjk} - P_{rj(k-1)}) + 3\,a_{3trj}(P_{rjk} - P_{rjk-1})^2)$$

$$\bar{X}_{rjk} = \bar{X}_{rj}(Q_{rjk} - Q_{rj(k-1)})/(P_{rjk} - P_{rjk(k-1)})$$

For C = 1 and L, the first and the last open ended classes.

The formulation is as follows:

$$A_{rjQ} = P_{rji}(\bar{X}_{rj}/X_{ij} \cdot P_{rj1})^{a_{rj1}}$$

where

$$a_{rji} = \frac{\bar{X}_{rj1}}{X_{rj1}}$$

$$A_{rjL} = P_{rjL}(X_{rk}/X_{rjL}\,P_{rjL})^{a_{rjL}}$$

where

$$A_{rjL} = \frac{\bar{X}_{rjL}}{X_{rj}}$$

$$P_{rj1} = A_{rj1} \times Q_{rj1}{}^{a_{rjk}}$$

$$Q_{rj1} = P_{rj1}/A_{rj1}{}^{1/a_{rj1}}$$

$$1 - P_{rjL} = A_{rjL}(1-Q_{rjL})^{a_{rjL}}$$

$$Q_{rjL} = 1 - \left[\frac{1-P_{rjL}}{A_{rjL}}\right]^{1/a_{rjL}}$$

$$X_{rk1} = \frac{\bar{X}_{rj}}{a_{rj1}} \cdot \left(\frac{1}{A_{rj1}}\right)^{1/a_{rj1}} \cdot (P_{rj1})^{-1+\left(1/a_{rj1}\right)}$$

$$X_{rkL} = \frac{\bar{X}_{rj}}{a_{rjL}} \cdot \left(\frac{1}{A_{rjL}}\right)^{1/a_{rjL}} \cdot (1-P_{rjL})^{\left(-11+1/a_{rjL}\right)}$$

$$X_{rjL} = (Q_{rj1}/P_{rj1})\,\bar{X}_{rj}$$

$$X_{rj1} = \frac{Q_{rj1} - Q_{rj(1-1)}}{P_{rj1} - P_{rj(1-1)}} \cdot \bar{X}_{rj}$$

Since the fractile analysis is being attempted in deflated expenditures, the expenditure class limits, too, were deflated implicity by multiplying them by the ratio of deflated per capita expenditures to current per capita expenditures. The estimates of average expenditures on food items were obtained as follows:

(i) Identify the per capita expenditure classes in which the fractile group $P_{rjk-1} - P_{rjk}$ lies.

(ii) Calculate $\bar{X}'_{rijk}$, the weighted average per capita expenditure on item i using population weights on per capita expenditures on item i of the identified classes.

(iii) Calculate the proportion $\bar{X}_{rjk}/\bar{X}'_{rjk}$ where X_{rjk} is the weighted average per capita expenditure of the identified classes.

(iv) $$\bar{X}_{rijk} = \bar{X}'_{rijk} \cdot \bar{X}_{rjk}/\bar{X}_{rjk}$$

8. Poverty Profile

The extent of poverty can be measured by

(i) the proportion of people living below a pre-determined poverty line in terms of per capita real expenditures or in terms of calories;

(ii) the Gini coefficient measuring the extent of diversion from the line of equality again in terms of per capita real expenditures or in terms of calories. The degree of poverty can be measured using Sen's Index of Poverty. This paper attempts to measure the extent and degree of poverty both in terms of real expenses and in terms of calories also indicates a likely deficiency in proteins.

Formulation

a. Gini co-efficient (G_{rji})

$$G_{rijk} = 1 - \sum_{i=1}^{K} (P_{rjt} - P_{rjt-1})(Q_{rijt} + Q_{rijt-1})$$

where k is the number of classes and i takes the values of per capita expenditures and calories.

b. Sen's Index of Poverty

The index is defined as follows:

$$I(rj)i = \frac{P_{rjk}}{X_{rijk}} \left[X^{*}_{rjik} - \bar{X}_{rjik}(1-G_{rjik}) \right]$$

where

P_{rjk} = Percentage of people below poverty line (estimated)
X_{*jik} = Mean consumption of the poor below the poverty line.
X_{rjik} = Poverty line, upper limit associated with P_{rjk}
G_{rjik} = Gini-coefficient of the poor (calculated up to the class defined by P_{rjki})

9. Reliability of NSSO Estimates

The NSSO uses a technically sound sample design to estimate consumer expenditures. The firmness of the design though makes the estimation of standard errors cumbersome, and therefore it is difficult to test the reliability of the results of the survey. The test of the reliability has to be sought thropgh comparisons of these estimated parameters from other sources of data. An extensive comparison through the last three decades is provided by the estimates of foodgrains availability by the Central Statistical Organization (CSO) from the production end. Another source of comparison are the estimates of intake of foodgrains prepared by National Nutrition Monitoring Bureau for 1974 onwards period.

The results of CSO and NSSO are significantly at variance. (See Table 2-7). The net availability of foodgrains per capita per day estimated by CSO does show a few ups and downs but does not show a trend over the last thirty years. The NSSO estimates of the same period depicts an increasing trend until 1960-61 and thereafter a declining trend. Beside the differing trends, the two results are widely apart in their absolute values. The NSSO results were about 30% higher than the CSO results in the 1950s. The declining NSSO estimates though have brought the two estimates closer, reducing the gap to 8%.

The declining per capita consumption of foodgrains per day and the accumulating food supplies in the wake of marginally increasing foodgrain production at a time when the country is poised for a change over from net importation to net exportation of foodgrains are a cause for concern in government circles and among researchers. The search for an answer has lead the researchers to doubt the validity of the NSSO estimates.

These doubts appear to be unfounded for the following reasons:

1. The NSSO is a scientifically designed sample survey, whereas the CSO uses a mix of methods and assumptions to derive its estimates.

2. The NSSO tries to capture directly the consumption of the households whereas the CSO uses residue estimates. The chances of error are greater in CSO estimates than in NSSO estimates.

3. The estimates of the National Nutrition Monitoring Bureau based on ten states are very close to NSSO estimates imparting a greater degree of reliability to NSSO estimates.

4. NSSO estimates portray a low nutrition profile for the majorityof the population. About 40% of the people in rural and urban areas are below the Indian Council of Medical Research (ICMR) recommended per capita of intake calories of 2150. In fact the calorie intake of 2150 is a physiological requirement level which can be obtained from a quantity of grains bought with

Table 2-7: Foodgrain Availability : Grams/per day

Years	Foodgrains			Cereals			Pulses		
	CSO	NSSO	NNMB[1]	CSO	NSSO	NNMB[1]	CSO	NSSO	NNMB[1]
1954-55	458	494		388			70		
1955-56	444	557		372			71		
1956-57	431	520		360			70		
1957-58	447	503		375			72		
1958-59	409	584		350	549		58	42	
1959-60	469	582		393	537		75	46	
1960-61	450	609		384	553		66	50	
1961-62	469	572		400	553		69	-	
1962-63	461	562		399	524		62	46	
1964-65	452	564		401	509		51	39	
1965-66	480	578		418	541		62	31	
1966-67	408	545		360	514		48	33	
1967-68	401	480		361	475		40	27	
1968-69	460	503		404	467		56	29	
1969-70	445	500		398	469		47	33	
1970-71	455	494		403	463		52	24	
1972-73	469	534		419	485		47	35	
1973-74	421	564		380	447		41	29	
1974-75	451			410			41		
1975-76	405			366		493	40		32
1976-77	434			374		494	51		43
1977-78	430	477		386	486	498	43	32	34
1978-79	468			422		523	46		36
1979-8-	476			432		515	45		37
1980-81	410			380		530	31		33
1981-82	453			416		557	37		35
1982-83	454			415			39		
1983-84	432	471		393	487		38	30	

[1] NNMB results are based on ten states: Andhra Pradesh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh, West Bengal.

Source: 1. Bulletin of Food Statistics: Directorate of Economics and Statistics, Govt. of India.
2. Estimated
3. Nutrition Profile in India over a decade by N. Prahlad Rao and J. Gowrinath Sastry, National Institute of Nutrition.

2470 calories, due to storage and cashing losses. This raised level of recmommended calorie intake will bring more than 50% of the people below the healthy line. It is not only a matter of numbers, even the level of calorie and adequate intake for poor is very low, averaging around 1200 calories. If the NSSO estimates are assumed to be overestimates and are reduced by about 20% to bring them at par with CSO estimates, then almost everybody in India will be below the poverty line and the very poor perhaps cannot survive.

10. State and NSSO Comparability

Table 2-8 shows comparative consumption data for Mahahrashtra for the 28th and 32nd and 38th rounds for the state and NSSO samples. As can be seen the two samples are quite comparable for each year. The 38th round data also show quantity comparisons with earlier years for the state sample and forms the basis for the 38th round price adjustment.

Table 2-8: Comparative Analysis of State Sample and NSSO Quantity Data for Maharashtra 28th and 32nd Round

Maharashtra

Commodity	28th Round		32nd Round		38th Round	
	Rural	Urban	Rural	Urban	Rural	Urban
Rice-NSSO	2.39	1.57	2.59	2.65		
Rice-SS	2.28	1.67	2.84	2.79	2.93	3.13
Wheat-NSSO	1.32	3.45	1.66	4.42		
SS	1.36	3.48	1.69	4.48	1.73	4.53
Jowar-NSSO	6.97	3.20	8.15	2.25		
SS	6.04	2.84	7.71	2.68	7.12	2.40
Bajra-NSSO	2.20	0.97	.77	.27		
SS	2.17	1.00	.77	.29	1.14	.30
Maize-NSSO	.09	.03	.07	.01		
SS	.13	.03	.05	.01	.01	.01
Cereals-NSSO	13.45	9.24	13.52	9.92		
SS	12.40	9.03	13.42	10.25	13.27	10.37
Pulses SS	.89	.95	.94	1.18	.96	1.19
Milk SS	1.90	3.15	1.63	3.38	1.86	3.71
Ed.Oil SS	1.90	3.15	1.63	3.38	1.86	3.71
Sugar SS	.43	.77	.44	.87	1.08	1.73
Gur SS	.47	.23	.58	.26	.42	.21

Table 2-9

Information Matrix of NSSO Expenditure Surveys

Round No.	Item Classification	State-wise Information	Expenditure Classes (Rs) Per Capita Per Month
2-13	Major food heads as food grains, milk products, edible oil, meat, egg/fish, sugar, salt, other food	-	0-8, 8-11, 11-13, 13-15 15-18, 18-21, 21-24, 24-28, 28-34, 34-43, 43-55, 55 and above (13)
14-16	Major food heads-cereals and substitutes, including pulses, milk and products	-	"
	8 major cereals	-	"
17	"	Maharashtra and Orissa	
18, 20, 21, 22, 12, 24, 25	Major food heads, cereals and substituted, pulses products and others		0-8, 8-11, 55-75 75 and above
19	Major food heads 8 major cereals	-	"
27-28	Major food heads 8 major cereals	Maharashtra and Orissa	0-13, 13-15, 75-100 150-200, 200 and above
32	"	"	0-10- 10-15, 15-20, 20-30, 150-200, 200-300, 300 and above
38	Major food heads	"	0-30, 30-40, 40-50 250-300, 300 and above

1. Rural and Urban are covered equally, wherever covered.

2. Class intervals selected so as to equalize the number of households in each class.

3. Quantity data is tabulated only for 8 major cereals.

4. Number of overlapping classes - 10.

Table 2-10
National Sample Survey Organization
Round Wise Period of Survey, Number of Strata, Sample Size and Subject Coverage

Round No	Period of Survey	Number of Strata		Sample Size		Subject of Enquiry
		Rural	Urban	Rural	Urban	
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	Oct 50-Mar 51	256		1833		Consumer expenditure, household enterprises, prices, wages, land utilization.
2.	Apr 51-Jun 51	240	-	1160	-	Consumer expenditure, household enterprises, village statistics.
3.	Aug 51-Nov 51	254	7	920	490	Consumer expenditure, household enterprises.
4.	Apr 52-Sep 52	240	7	960	406	Consumer expenditure, household enterprises, village statistics, land utilization.
5.	Dec 52-Mar 53	240	7	960	406	Consumer expenditure, household enterprises, prices, non-household manufacturing establishments, land utilization.
6.	May 53-Sep 53	240	20	960	444	In addition to 5th round subjects, village statistics, opinion of newspaper readers about newspaper reading.
7.	Nov 53-Mar 54	240	20	960	444	Consumer expenditure, household enterprises, non-household manufacturing establishments, opinion on outturn of rice in villages, land utilization, village statistics, housing condition.
8.	Jul 54-Mar 55	356	20	1424	468	Consumer expenditure, household enterprises, prices, land holding with reference to operational holdings, trend of self-management of agricultural holdings, household indebtedness, farming practices, land utilization, housing condition.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
9.	May 55-Sep 55	266	94	1624	2108	Vital statistics, employment and unemployment, land utilization, small-scale manufacture and handicrafts, transport and trade, consumer expenditure, income and expenditure, prices.
10.	Dec 55-May 56	266	94	1624	1328	Village statistics, housing condition, employment and unemployment, land utilization and yield survey, small-scale manufacture and handicrafts, transports, trade, profession, service and financial operation, income and expenditure, prices.
11.	Aug 56-Jan 57	72	94	1848	584	Village statistics, housing condition, employment and unemployment and indebtedness of agriculture labor households, employment and unemployment of households other than agricultural labor households, land utilization and yield survey and measures in urban areas.
12.	Mar 57-Aug 57	72	94	1848	584	Village statistics, vital statistics, housing conditions, employment and unemployment and indebtedness of agricultural labor households, employment and unemployment of households other than agricultural labor households, land utilization and yield survey, production of milk and production and utilization of cattle dung, housing, income and expenditure, prices, weights and measures in urban areas.
13.	Sep 57-May 58	72	94	2072	1224	Village statistics, vital statistics, employment and unemployment, land utilization and yield surveys, income and expenditure, prices, reader's preference.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
14.	Jul 58-Jun 59	218	94	2616	2216	Village statistics, population, births and deaths, employment and unemployment, land utilization and yield surveys, small-scale manufacture and handicrafts, income and expenditure, prices.
15.	Jul 59-Jun 60	218	94	2616	2229	Population, births and deaths, housing condition, employment and unemployment, land utilization and yield surveys, non-mechanized transport and utilization of working animals, livestock products, non-registered trade, building construction (rural) and capital formation, consumer expenditure, disposal of cereals by producer, household prices.
16.	Jul 60-Aug 61	221	63	3798	2272	Population, births and deaths, family planning, housing condition, employment, unemployment, urban labor force, number of physically handicapped persons, ownership of land and operational holding (rural) land utilization and yield survey, household indebtedness, consumer expenditure, prices.
17.	Sep 61-Aug 62	2166	35	3888	2237	Population, births and deaths, morbidity, employment and unemployment, urban labor force, ownership of land and operational holdings, land utilization and yield survey, capital formation, consumer expenditure, prices

18.	Feb 63-Jan 64	353	37	8472	4572	Village statistics, population, births and deaths, migration, housing conditions, urban labor force, land utilization and yield survey, earnings from profession and liberal arts, construction, indebtedness of scheduled tribe households in Manipur and Tripura, income of rural labor households, consumer expenditure, prices.
19.	Jul 64-Jun 65	353	37	8472	4572	Village and block statistics, population, births and deaths, housing conditions, urban labor force, employment and unemployment, indebtedness of rural labor households, land utilization and yield survey, integrated household schedule (detailed and abridged), prices.
20.	Jul 65-Jun 66	355	39	8520	4596	Village and block statistics, population, births-deaths, housing condition, urban labor force, employment unemployment and indebtedness of rural labor households, land utilization, yield survey, integrated household schedule.
21.	Jul 66-Jun 67	355	39	8520	4596	Village and block statistics, population, births and deaths, housing condition, urban labor force, land utilization and yield survey, integrated household schedule detailed and abridged with emphasis on land utilization, opinion on production of cereal crops, prices.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
22.	Jul 67-Jun 68	356	44	8544	4608	Village and block statistics, population, births and deaths, housing condition, number of pucca houses, urban labor force, land utilization and yield survey, integrated household surveys, farming practics, opinion on production of cereal crops, prices.
23.	Jul 69-Jun 69	350	44	8400	4632	Population, births and deaths, housing condition, number of pucca houses, land utilization and yield survey, small scale manufacturing (household and non-household), integrated household schedule, opinion on production of cereals crops, prices.
24.	Jul 69-Jun 70	350	44	8400	4632	Number of pucca houses, number of physically handicapped persons, land utilization and yield survey, non-registered distributive trade, integrated household schedules, opinion on produtionof cereal crop. prices.
25.	Jul 70-Jun 71	350	45	8400	4640	Statistical check on land utilization, indebtedness of non-manual employee households in urban areas, economic condition of weaker section of rural population, integrated household schedule (revised), prices.
26.	Jul 71-Sep 72	379	47	4200	4640	Village statistics, number of pucca houses, land holdings, statistical check on land utilization, debt and investment, consumer expenditure, prices.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
27.	Oct 72-Sep 73	392	50	9088	4832	Seasonal migration, number of pucca, semipucca and kutcha houses, employment and unemployment, current building activity in rural areas, consumer expenditure, prices.
28.	Oct 73-Jun 74	516	507	8730	4934	Population, births and deaths, morbidity, fertility, maternal and childcare, family planning, housing condition, normal health facilities in rural areas, disability, number of physically and mentally affected persons, number of new buildings, consumer expenditure, prices.
29.	Jul 74-Jun 75	516	386	8512	4872	Employment, unemployment and indebtedness of rural households, small-scale manufacture and handicrafts, mining and quarrying trade, hotels and restaurants, transport, service, construction, consumer expenditure, income, availability and extent of utilization of electricity in rural areas, prices.
30.	Jul 75-Jun 76	520	386	8632	9756	Village statistics, livestock number and products, consumption of livestock products, livestock enterprises, survey on railway travel, prices.
31.	Jul 76-Jun 77	530	151*	10524	2028	Education in both rural and urban areas, survey on practices of Jhum cultivation in rural areas, household indebtedness survey in Himachal Pradesh, economic condition of urban slum dwellers, performance of irrigation, rural electrification, rural retail prices in North East region.

(1)	(2)	(3)	(4)	(5)	(6)	(7)
32	Jul 77-Jan 78	530	386	8820	4940	Employment-unemployment, consumber expenditure.
33	Jul 78-Jun 79	378	375	11245	6996	Non-agricultural manufacture (other than factory establishments)
34	Jul 79-Jun 80	378	375	8008	4500	Education, medical health, unorganized sector of trade, transport, hotels and restaurants, storages and warehousing and services and prices.
35	Jul 80-Jun 81	379	375	8006	4500	Maternal and child care, family planning education, medical and health, construction activity and social consumption prices.
36	Jul 80 Jan 81	-	-	6206	3962	Survey on disabled persons.
37	Jan - Dec 82	497	363	3755	2450	
				(7718)*	(5169)*	Land holding and livestock holding and debt and investment survey.
38	Jan - Dec 83	-	-	8598	4572	Employment and unemployment and consumer expenditure.
39	Jan - Jun 84	-	-	4275	2278	Births, deaths and population survey.
40	Jul 84-Jun 85	-	-	-	-	Survey unorganized manufacturer, non-directory establishment and own account enterprises.
41	July 85-Jun 86	-	-	4328	10405	Survey on unorganized trade non-directory establishment and own account enterprises.
42	Jul 86-Jun 87	-	-	-	-	Survey on social consumption aged persons and ex-servicemen.

*This includes state sample for results on debt and investment survey.

Appendix 3: Consumer Behavior Model

The basic economic model of consumer behavior in its simplest version can be summarized as follows:

The relevant consuming unit can be characterized as having a utility function in which utility or satisfaction is realized from consuming a set of goods (including foods $F_1 \ldots F_n$ and non foods X)

$$1. \quad U = U(F_1, F_2 \ldots F_n, X)$$

These goods have prices $(P_1 \ldots P_n)$ and the consuming unit has an income constraint I such that the total spending on goods cannot exceed I.

$$2. \quad I = P_1F_1 + P_2F_2 + \ldots P_nF_n + P_xX \quad \text{u.c.}$$

The consumer then maximizes utility (1) subject to the budget constraint (2). This yields a <u>system</u> of demand equations where the consumption of such goods is related to the prices of all goods and income.

$$3. \quad \begin{aligned} F_1 &= F_1(P_1, P_2 \ldots P_n, P_x, I) \\ F_2 &= F_2(\quad\quad\quad\quad\quad\quad\quad\quad) \\ F_n &= F_n(\quad\quad\quad\quad\quad\quad\quad\quad) \\ X &= X(\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad) \end{aligned}$$

Knowledge of the relevant parameters of system (3), i.e., the price and income elasticities would allow us to <u>predict</u> <u>changes</u> in F_1, $F_2 \ldots F_n$ and X for given <u>changes</u> in prices P_1, $P_2 \ldots P_n$ and income I.

Thus if we know how changes in agricultural production are translated into changes in prices and incomes for different consumer units, we can use system (3) to further translate changes in agricultural production into changes in consumption. Actually this simple model is very complex because the following steps are required to establish the "relationship" between production and consumption.

1. The impact of <u>policy variables</u> (research, irrigation, etc.) on farm production (supply) and factor use (demand) must be determined.

2. Changes in farm supply and factor demand must be converted into changes in prices and income for farmer and farm laborers.

3. Changes in prices and income must be converted into changes in food and non-food consumption via (3).

This then requires a complex model of the type that Binwanger, Quizon and Gupta (1985) and Evenson (1985) have utilized (the BEQG model).. The scope of this study does not allow a complete development of a general equilibrium model although I will use the BEQG model to discuss changes in consumption in Section B, Part II. We have two somewhat simpler alternatives to pursue. The first of these is to simply focus on the third step noted above, i.e., to discuss the changes in consumption in terms of changes in prices and incomes. (This is done in Section A, Part II. See Table 3-1 for price and income elasticities from Swami and Binswanger). The second is to derive a "reduced form" empirical

Table 3-1 Price and Income Elasticities of Demand, by Commodity and by Producer Group, North India

Producer Groups	Commodities	Commodity Elasticities With Respect to the Prices of					Income
		Rice	Wheat	Coarse Cereals	Other Food	Nonfood	
Marginal	Rice	-0.8506	0.2967	-0.1529	0.5095	0.2019	0.7154
	Wheat	0.7634	-0.7234	0.0403	0.1282	-0.2040	1.0209
	Coarse Cereals	-0.4305	0.0390	-0.5068	0.6870	0.2159	-0.4536
	Other Food	0.3827	0.0373	0.1902	-0.7975	0.1918	1.1351
	Nonfood	0.2463	-0.0978	0.0988	0.3105	-0.5532	1.5761
Small	Rice	-0.8708	0.3068	-0.1784	0.5257	0.2143	0.6864
	Wheat	0.7591	-0.7219	0.0287	0.1304	-0.1987	1.0034
	Coarse Cereals	-0.5425	0.0285	-0.4605	0.7426	0.2295	-0.5728
	Other Food	0.3667	0.0366	0.1781	-0.7889	0.2051	1.1181
	Nonfood	0.2331	-0.0889	0.0881	0.3182	-0.5530	1.5760
Medium	Rice	-0.9220	0.3362	-0.2436	0.5690	0.2448	0.6074
	Wheat	0.7438	-0.7190	0.0030	0.1381	-0.1815	0.9619
	Coarse Cereals	-0.8321	0.0026	-0.3363	0.8869	0.2634	-0.8598
	Other Food	0.3281	0.0358	0.1504	-0.7678	0.2378	1.0781
	Nonfood	0.2011	-0.0675	0.0641	0.3374	-0.5506	1.5740
Large	Rice	-1.0286	0.4318	-0.3824	0.6778	0.2991	0.3922
	Wheat	0.6721	-0.7216	-0.0169	0.1744	-0.1103	0.9009
	Coarse Cereals	-1.4866	-0.0469	-0.0127	1.2177	0.3264	-1.3146
	Other Food	0.2631	0.0430	0.1221	-0.7282	0.2976	1.0253
	Nonfood	0.1466	-0.0353	0.0421	0.3717	-0.5274	1.5520
Urban	Rice	-0.9499	0.3612	-0.2799	0.5975	0.2590	0.5512
	Wheat	0.7251	-0.7197	-0.0216	0.1476	-0.1629	0.9459
	Coarse Cereals	-1.0034	-0.0103	-0.2516	0.9734	0.2799	-0.9788
	Other Food	0.3111	0.0377	0.1430	-0.7574	0.2535	1.0643
	Nonfood	0.1868	-0.0591	0.0584	0.3464	-0.5445	1.5682

specification that can be used to simplify the above model (the topic of Section C, Part II). This specification is related to some degree to the "povertyology" specifications reviewed in Part I of this paper.

The idea of a reduced form is fairly simple. Suppose that we specify supply functions for the same goods for which demand functions are specified in system (3).

4. $F_1 = S_1(P_1, P_2 \ldots W_1, Z_1, Z_2)$
$F_2 = S_2(P_2, P_1, P_3 \ldots W_1, Z_1, Z_2)$
$F_n = S_n(P_n, P_1 \ldots P_{n-1}, W_1, Z_1, Z_2)$
$X = S_x(P_x\ W_1\ Z_3)$

The supply of each of these goods is determined partly by its own price, partly by other prices and wages and partly by fixed factors and policy variables (Z_1, Z_2, etc.). The supply system in the BEQG model for $F_1 \ldots F_n$ (four products, rice, wheat, coarse cereals, other crops) is derived from a profit maximizing system and allows for cross-price effects between the products. The variable, include fixed farm factors such as land and irrigated acreage and farm technology (research, extension, HYV's). These are the policy variables that we would like to link to the consumption of $F_1, F_2 \ldots F_n$. System (4) links them to their production or supply.

The idea of a reduced form is that systems (3) and (4) can be solved for equilibrium prices ($P_1 \ldots P_n, P_x$) and quantities ($F_1, F_2 \ldots F_n$, X). These prices and quantities are known as the "endogenous" variables of the system. All others are "exogenous" in that they are not chosen by the suppliers or demanders. Under certain conditions one can express the equilibrium endogenous variables in terms of the exogenous variables. These relationships are known as "reduced form" equations.

5. $F_1 = F_1(W_1 W_2 Z_1 Z_2 P_n I)$
$F_2 = F_2($ $)$
$F_n = F_n($ $)$
$P_1 = P_1($ $)$
$P_n = P_n($ $)$

This reduced form system provides a rationale for empirical specifications linking consumption directly to agricultural policy variables. It is a rather crude justification because some of the prices, etc., may not be truly exogenous. Income of farm people, for example, is determined endogenously in this model while for urban consumers it may be reasonably exogenous. For agricultural areas (and possibly for urban areas as well) the labor market has to be added to the above system. System (4) can be extended to incorporate the demand side of the agricultural labor market. The supply side will be determined by migration behavior and population growth. Exogenous variables for the labor market (population density or population growth) can then be included in (5).

As noted, there are always questions as to variable definitions and exogeneity with specifications like (5), but at least they provide a guide to specification, and interpretations which contrasts to much of the povertyology literature where no such guidelines are developed.

Our specialized concern with food consumption in this study is derived from a further link or relationship: the link between food intake, health and nutritional status. This requires a further degree of complexity in the above model, although it allows us to include health and nutritional status variables as endogenous or dependent variables in system (5) and provides a justification for including health and nutrition related program variables as exogenous on independent variables in (5). (See Section C, Part II).

The modern household economics models specify the utility function (1) in terms of "home" goods.

1. $U^1 = U^1(H_1, H_2 \ldots H_n)$

These home goods are viewed as being in some sense "produced" in the home. Some of them could be purchased in markets but typically they are not. They are produced from goods that are market goods, household time, fixed home capital and infrastructure.

1) $H_1 = H_1(F_1, F_2 \ldots F_n, X, T_{hi}, K_{hi}, Z_h)$

Ready to consume meals, for example, are prepared or produced using foods, time and capital. Health or nutritional status can be considered to be a home good. It is produced from nutrient intake, from time devoted to sanitation and to preventive health care and to factors exogenous to the household such as the availability of health services, the state of community sanitation and brevailing infectious diseases in the community.

Since foods contain nutrient characteristics as well as non-nutrient or "taste" characteristics, consumers value foods for two reasons, taste and health enhancement. This feature of food, i.e., that foods "jointly" produce two home goods, lies at the base of the "dietary efficiency" problem. This is because foods and combinations of foods that are nutrient efficient, i.e., provide maximum nutrients per rupee expended are not generally taste efficient, i.e., provide maximum taste per rupee expended. Minimum cost diets typically contain only a few (5-8) foods and while one or more of these is a staple food, the variety value for taste considerations is not high. Skilled home managers know how to combine foods so as to achieve a high level of taste in a nutrient efficient diet. Most Indian diets are highly nutrient efficient but as income rises families generally sacrifice nutrient efficiency to obtain more taste efficiency.

The general household model thus has the virtue that non-market home goods such as health, number of children, taste, etc. can be modelled in a fashion consistent with consumer maximization principles. The demand system (2) from this model is more complex but richer. It includes the price of time (wages), and fixed factors and policy variables in home production relationships as well as prices and incomes. Furthermore, as we carry this model over to the reduced form version (5) we have a justification for including health and nutritional status variables as endogenous variables. We also can include health policy variables as independent exogenous variables (note that we cannot identiy the home production relationships themselves so we cannot measure the effect of nutrient intake of health status per se because both are endogenous variables).

Appendix 4: Basic Tables

Guide to the Abbreviations Used in the Basic Tables

AR= All India, Rural
AU= All India, Urban

Round Number	Year
2	1951
3	1951
4	1952
5	1952-53
6	1953
7	1953-54
8	1954-55
9	1955
10	1955-56
11	1956-57
13	1957-58
14	1958-59
15	1959-60
16	1960-61
17	1961-62
18	1963-64
19	1964-65
20	1965-66
21	1966-67
22	1967-68
23	1969
24	1969-70
25	1970-71
27	1972-73
28	1973-74
32	1977-78
38	1983

LISTING OF DECILES BY COMMODITY

COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR 1												
AR FOODGRAINS	2	9.83	15.24	18.08	21.64	22.86	24.12	27.31	31.41	30.62	39.06	23.69
AR FOODGRAINS	3	10.88	16.07	18.51	21.23	24.32	26.31	26.70	29.91	33.98	40.02	24.23
AR FOODGRAINS	4	10.05	14.60	17.97	20.22	22.48	25.49	26.06	28.41	32.73	33.15	22.94
AR FOODGRAINS	5	9.92	13.98	16.86	18.77	20.69	22.26	23.24	25.91	24.84	23.20	19.61
AR FOODGRAINS	6	10.82	16.77	19.54	21.03	23.79	25.71	27.58	27.72	29.76	35.20	23.78
AR FOODGRAINS	7	11.13	14.71	17.41	18.88	20.77	21.53	22.50	24.33	22.54	22.44	18.94
AR FOODGRAINS	8	9.59	15.11	17.39	19.37	21.27	22.30	23.11	24.41	26.98	20.12	19.69
AR FOODGRAINS	9	10.04	16.03	18.29	20.90	22.97	24.46	25.03	25.43	28.85	23.27	20.52
AR FOODGRAINS	10	13.26	17.43	19.83	22.49	24.64	26.11	28.12	30.94	31.37	35.96	24.26
AR FOODGRAINS	11	11.53	15.06	16.94	18.78	21.29	22.81	23.79	25.60	26.28	20.47	21.03
AR FOODGRAINS	13	10.71	15.01	17.38	19.34	20.28	21.35	23.18	25.59	25.88	25.40	20.43
AR FOODGRAINS	14	12.11	16.63	20.03	22.11	23.48	24.97	27.89	29.96	29.49	33.38	23.65
AR FOODGRAINS	15	13.61	17.84	20.21	22.20	24.53	25.80	26.66	28.85	28.75	32.26	23.55
AR FOODGRAINS	16	14.11	18.24	20.87	21.88	25.03	26.91	28.60	27.17	31.44	34.69	24.84
AR FOODGRAINS	17	13.81	17.95	20.39	21.44	23.52	25.56	27.43	28.01	27.14	28.76	23.29
AR FOODGRAINS	18	13.90	17.96	20.10	21.29	22.84	24.15	25.47	26.23	28.32	26.44	22.80
AR FOODGRAINS	19	12.92	16.64	19.12	21.25	22.76	23.98	24.98	26.68	27.36	29.85	23.13
AR FOODGRAINS	20	12.72	16.80	18.90	20.80	22.88	25.00	27.01	28.67	30.22	33.28	24.00
AR FOODGRAINS	21	11.09	15.85	18.05	19.53	21.48	23.30	24.78	27.65	31.10	34.80	22.51
AR FOODGRAINS	22	10.02	13.49	15.75	17.32	18.61	20.91	21.76	22.61	24.60	31.57	19.70
AR FOODGRAINS	23	11.16	14.83	17.07	18.56	19.60	22.12	22.52	22.75	24.03	30.19	20.37
AR FOODGRAINS	24	11.53	15.52	16.99	18.81	20.02	20.72	22.67	23.78	25.12	31.63	20.24
AR FOODGRAINS	25	11.03	13.99	15.92	17.43	17.92	20.03	20.42	22.83	25.05	26.26	19.86
AR FOODGRAINS	27	11.25	14.80	16.33	18.56	19.51	21.25	22.39	23.02	27.43	18.30	21.49
AR FOODGRAINS	28	13.48	16.22	17.90	19.67	20.99	23.58	24.17	26.48	28.78	22.86	22.84
AR FOODGRAINS	32	11.73	14.99	16.28	18.02	19.10	19.70	20.29	21.19	22.32	20.26	19.11
AR FOODGRAINS	33	11.68	13.95	15.50	16.82	18.92	19.30	19.74	22.68	23.44	21.46	18.84

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR 2													
AR	CEREALS	14	10.39	14.26	16.90	18.56	20.09	21.47	23.21	24.60	24.65	27.21	19.91
AR	CEREALS	15	11.35	14.95	16.92	18.58	20.46	21.56	22.13	23.81	23.82	26.79	19.60
AR	CEREALS	16	11.39	14.84	16.97	18.00	20.60	22.07	23.25	22.01	25.32	27.60	20.11
AR	CEREALS	17	11.58	15.32	17.65	18.53	20.31	21.99	23.59	24.19	23.43	24.78	20.05
AR	CEREALS	18	11.65	15.08	16.91	17.89	18.99	20.01	21.23	21.77	23.43	21.34	18.99
AR	CEREALS	19	10.63	13.61	15.64	17.29	18.36	19.24	19.91	22.87	21.49	22.85	18.46
AR	CEREALS	20	10.81	14.28	15.96	17.49	19.24	21.03	22.61	23.93	25.08	27.06	20.06
AR	CEREALS	21	9.32	13.41	15.42	16.57	18.22	19.71	20.83	23.25	25.95	28.80	18.93
AR	CEREALS	22	9.01	12.10	14.13	15.49	16.59	18.64	19.35	20.05	21.57	27.06	17.44
AR	CEREALS	23	9.35	12.36	14.27	15.45	16.33	18.43	18.69	18.72	19.59	24.35	16.85
AR	CEREALS	24	9.78	13.17	14.39	15.93	16.90	17.41	19.05	19.82	20.71	25.79	16.92
AR	CEREALS	25	9.49	11.95	13.55	14.80	15.17	16.96	17.20	19.23	20.90	21.29	16.64
AR	CEREALS	27	9.63	12.58	13.81	15.70	16.35	17.81	18.47	18.80	22.40	13.52	17.55
AR	CEREALS	28	9.72	12.57	13.82	15.18	16.14	18.13	18.47	21.76	21.81	16.58	17.41
AR	CEREALS	32	11.14	14.13	15.22	16.85	17.74	18.16	18.54	19.11	19.82	17.38	17.47
AR	CEREALS	38	11.14	13.27	14.69	15.88	17.86	18.04	18.27	20.99	21.40	18.60	17.48

LISTING OF DECILES BY COMMODITY

COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR 3												
AR RICE & PR	14	5.12	7.03	8.33	9.62	11.22	12.41	12.77	13.11	13.62	12.60	10.57
AR RICE & PR	15	5.81	7.63	8.76	9.62	11.86	12.20	11.65	13.14	12.19	13.79	10.47
AR RICE & PR	16	5.56	7.49	8.47	9.39	10.74	11.81	12.34	12.14	14.39	14.03	10.63
AR RICE & PR	17	6.14	8.46	10.63	11.70	12.83	14.18	15.03	15.07	13.45	14.27	12.12
AR RICE & PR	19	6.65	8.75	10.05	11.23	12.13	12.68	13.13	15.07	13.41	13.00	11.83
AR RICE & PR	27	5.05	6.64	7.43	8.44	9.00	9.80	10.15	10.13	12.07	6.91	9.38
AR RICE & PR	28	5.57	7.20	8.09	8.89	9.78	10.98	11.57	13.63	13.81	9.82	10.58
AR RICE & PR	32	5.42	7.22	8.15	9.02	9.79	10.19	10.36	10.41	10.40	8.46	9.32

LISTINS OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR 4													
AR	WHEAT & PR	14	0.66	0.91	1.28	1.50	1.74	2.18	2.80	3.21	4.39	6.89	2.51
AR	WHEAT & PR	15	0.67	1.29	1.81	1.99	2.12	2.84	3.51	3.67	4.81	6.21	2.79
AR	WHEAT & PR	16	0.79	1.15	2.06	2.68	3.07	3.41	4.04	4.25	5.25	8.26	3.49
AR	WHEAT & PR	17	1.01	1.58	1.87	2.04	2.23	2.59	3.04	3.67	5.10	7.32	3.06
AR	WHEAT & PR	19	1.05	1.62	1.87	2.25	2.63	2.98	3.48	4.00	4.75	7.47	3.24
AR	WHEAT & PR	27	1.70	2.51	2.92	3.32	3.73	4.07	4.55	5.07	6.05	6.00	4.48
AR	WHEAT & PR	28	1.93	2.79	3.66	4.02	4.68	5.26	5.79	6.82	7.48	7.61	5.39
AR	WHEAT & PR	32	1.86	2.58	2.98	3.30	3.61	3.89	4.23	4.81	5.54	6.23	4.02

LISTING OF DECILES BY COMMODITY

	COMMODITY	SOUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR 5													
AR	JAWAR & PR	14	1.93	2.65	2.95	2.96	2.66	2.50	2.32	2.22	1.79	1.53	2.29
AR	JAWAR & PR	15	1.57	1.97	2.15	2.36	2.04	1.92	1.88	1.70	1.64	1.57	1.83
AR	JAWAR & PR	16	1.35	1.93	1.85	1.78	2.03	2.13	1.85	1.35	0.89	1.31	1.57
AR	JAWAR & PR	17	1.32	1.90	2.08	1.72	1.89	1.67	1.69	1.77	1.81	0.72	1.65
AR	JAWAR & PR	19	1.06	1.52	1.75	1.74	1.59	1.53	1.46	1.67	1.44	0.94	1.48
AR	JAWAR & PR	27	1.08	1.36	1.46	1.66	1.61	1.75	1.70	1.63	1.94	0.63	1.61
AR	JAWAR & PR	28	1.48	1.79	1.72	1.89	1.67	1.87	1.50	1.77	1.46	0.97	1.62
AR	JAWAR & PR	32	1.72	1.85	1.63	1.80	1.63	1.41	1.25	1.15	1.08	0.59	1.46

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR 6													
AR	BAJRA & PR	14	0.38	0.52	0.58	0.83	1.13	1.12	1.39	1.85	1.41	2.06	1.13
AR	BAJRA & PR	15	0.34	0.50	0.62	0.69	0.67	0.74	1.01	1.47	1.47	1.29	0.87
AR	BAJRA & PR	16	0.34	0.52	0.69	0.63	0.72	0.69	0.69	0.88	0.90	0.52	0.65
AR	BAJRA & PR	17	0.26	0.45	0.43	0.52	0.57	0.76	0.87	0.89	0.90	0.50	0.64
AR	BAJRA & PR	19	0.33	0.53	0.60	0.75	0.90	1.01	1.02	1.17	1.31	1.25	0.92
AR	BAJRA & PR	27	0.27	0.50	0.61	0.69	0.77	0.84	0.90	1.00	1.19	0.33	0.83
AR	BAJRA & PR	28	0.57	0.73	0.81	0.89	0.95	1.06	1.06	1.25	1.18	0.44	0.96
AR	BAJRA & PR	32	0.31	0.43	0.48	0.53	0.59	0.65	0.69	0.77	0.84	0.64	0.63

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR 7													
AR	MAIZE & PR	14	0.55	0.75	0.86	0.79	0.78	0.77	0.79	0.76	0.66	0.86	0.74
AR	MAIZE & PR	15	0.72	0.86	0.85	0.94	0.93	0.97	0.85	0.78	0.70	0.49	0.80
AR	MAIZE & PR	16	0.70	0.94	0.96	0.80	0.92	0.75	0.70	0.47	0.59	0.62	0.73
AR	MAIZE & PR	17	0.86	0.87	0.67	0.75	0.82	0.80	0.69	0.82	0.84	0.48	0.74
AR	MAIZE & PR	19	0.81	0.73	0.84	0.93	0.90	0.85	0.75	0.87	0.68	0.77	0.81
AR	MAIZE & PR	27	0.93	0.99	0.91	1.03	0.85	0.93	0.85	0.79	0.94	0.37	0.92
AR	MAIZE & PR	28	0.54	0.77	0.71	0.78	0.74	0.83	0.75	0.88	0.76	0.33	0.75
AR	MAIZE & PR	32	0.51	0.56	0.53	0.58	0.55	0.52	0.51	0.48	0.47	0.31	0.52

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR 8													
AR	RAGI & PR	14	0.61	0.84	0.70	0.64	0.62	0.48	0.38	0.34	0.35	0.03	0.48
AR	RAGI & PR	15	0.55	0.62	0.55	0.61	0.56	0.55	0.55	0.57	0.42	0.49	0.56
AR	RAGI & PR	16	0.57	0.55	0.58	0.54	0.62	0.65	0.62	0.57	0.69	0.70	0.59
AR	RAGI & PR	17	0.65	0.58	0.52	0.47	0.52	0.65	0.79	0.64	0.39	0.50	0.58
AR	RAGI & PR	19	0.47	0.41	0.47	0.48	0.48	0.47	0.51	0.58	0.57	0.42	0.51
AR	RAGI & PR	28	0.46	0.52	0.43	0.47	0.41	0.46	0.43	0.51	0.55	0.78	0.51
AR	RAGI & PR	32	0.43	0.48	0.45	0.49	0.46	0.40	0.39	0.39	0.37	0.22	0.42

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR 9													
AR	BARLEY &PR	14	0.21	0.29	0.53	0.57	0.49	0.50	0.68	0.75	0.47	0.52	0.48
AR	BARLEY &PR	15	0.48	0.53	0.57	0.62	0.66	0.63	0.72	0.63	0.79	0.83	0.62
AR	BARLEY &PR	16	0.68	0.63	0.61	0.54	0.62	0.70	1.00	0.62	0.77	0.55	0.70
AR	BARLEY &PR	17	0.62	0.72	0.91	0.87	0.95	0.78	0.77	0.66	0.49	0.65	0.69
AR	BARLEY &PR	19	0.27	0.33	0.38	0.38	0.39	0.46	0.45	0.52	0.36	0.39	0.39
AR	BARLEY &PR	27	0.20	0.27	0.27	0.30	0.31	0.33	0.33	0.28	0.33	0.11	0.30
AR	BARLEY &PR	28	0.11	0.15	0.19	0.20	0.22	0.25	0.22	0.26	0.20	0.05	0.20
AR	BARLEY &PR	32	0.14	0.14	0.14	0.15	0.15	0.15	0.14	0.14	0.14	0.15	0.15

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR10													
AR	SM. MILLET	14	0.27	0.37	0.39	0.33	0.23	0.21	0.22	0.19	0.11	0.10	0.23
AR	SM. MILLET	15	0.35	0.41	0.37	0.41	0.34	0.36	0.40	0.31	0.22	0.51	0.35
AR	SM. MILLET	16	0.33	0.31	0.32	0.27	0.31	0.28	0.30	0.15	0.12	0.11	0.23
AR	SM. MILLET	17	0.34	0.38	0.26	0.20	0.22	0.20	0.26	0.27	0.15	0.12	0.24
AR	SM. MILLET	19	0.37	0.25	0.29	0.28	0.24	0.22	0.19	0.22	0.19	0.11	0.23
AR	SM. MILLET	27	0.27	0.24	0.21	0.24	0.19	0.20	0.16	0.12	0.15	0.04	0.19
AR	SM. MILLET	28	0.28	0.21	0.16	0.18	0.17	0.19	0.14	0.16	0.13	0.08	0.18
AR	SM. MILLET	32	0.23	0.22	0.19	0.21	0.18	0.16	0.13	0.11	0.11	0.08	0.17

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR11													
AR	GRAM	14	0.32	0.44	0.67	0.64	0.52	0.57	0.91	1.04	0.76	1.09	0.66
AR	GRAM	15	0.53	0.74	0.83	0.91	0.86	0.95	1.15	1.04	1.09	1.18	0.88
AR	GRAM	16	0.41	0.50	0.60	0.59	0.68	0.84	0.96	0.82	0.94	0.97	0.75
AR	GRAM	17	0.39	0.43	0.38	0.41	0.45	0.55	0.67	0.67	0.64	0.91	0.55
AR	GRAM	19	0.19	0.23	0.26	0.38	0.43	0.42	0.44	0.50	0.56	0.58	0.42
AR	GRAM	20	0.28	0.36	0.47	0.48	0.44	0.49	0.55	0.58	0.64	0.85	0.52
AR	GRAM	21	0.15	0.22	0.23	0.32	0.35	0.43	0.50	0.56	0.68	0.72	0.41
AR	GRAM	22	0.08	0.14	0.16	0.16	0.19	0.22	0.21	0.23	0.31	0.59	0.23
AR	GRAM	23	0.16	0.24	0.29	0.37	0.33	0.38	0.37	0.41	0.47	0.74	0.36
AR	GRAM	24	0.11	0.13	0.18	0.20	0.20	0.23	0.25	0.31	0.38	0.57	0.25
AR	GRAM	25	0.15	0.20	0.23	0.25	0.23	0.25	0.25	0.28	0.32	0.46	0.27
AR	GRAM	27	0.06	0.09	0.11	0.13	0.15	0.17	0.22	0.27	0.32	0.49	0.23
AR	GRAM	28	0.04	0.08	0.10	0.10	0.11	0.13	0.14	0.17	0.21	0.25	0.15
AR	GRAM	32	0.06	0.08	0.10	0.11	0.13	0.16	0.19	0.22	0.28	0.34	0.17
AR	GRAM	38	0.05	0.06	0.06	0.06	0.07	0.09	0.11	0.12	0.15	0.26	0.11

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR13													
AR	CEREAL SUB	14	0.24	0.34	0.43	0.62	0.42	0.21	0.44	0.64	0.37	0.27	0.36
AR	CEREAL SUB	15	0.47	0.47	0.39	0.42	0.45	0.40	0.40	0.41	0.30	0.09	0.37
AR	CEREAL SUB	16	0.57	0.59	0.58	0.31	0.35	0.22	0.18	0.15	0.13	0.05	0.33
AR	CEREAL SUB	17	0.41	0.34	0.21	0.25	0.28	0.34	0.31	0.23	0.23	0.10	0.26
AR	CEREAL SUB	18	0.34	0.33	0.28	0.23	0.22	0.23	0.19	0.14	0.09	0.06	0.19
AR	CEREAL SUB	19	0.32	0.28	0.32	0.27	0.30	0.34	0.28	0.33	0.16	0.15	0.28
AR	CEREAL SUB	20	0.33	0.35	0.32	0.35	0.39	0.43	0.38	0.35	0.30	0.12	0.36
AR	CEREAL SUB	21	0.55	0.54	0.48	0.39	0.43	0.39	0.36	0.40	0.36	0.28	0.41
AR	CEREAL SUB	22	0.35	0.39	0.39	0.36	0.34	0.38	0.31	0.21	0.20	0.25	0.32
AR	CEREAL SUB	23	0.23	0.26	0.24	0.24	0.23	0.26	0.20	0.14	0.15	0.25	0.23
AR	CEREAL SUB	24	0.30	0.34	0.28	0.31	0.30	0.26	0.29	0.24	0.20	0.19	0.28
AR	CEREAL SUB	25	0.18	0.22	0.21	0.22	0.18	0.21	0.17	0.19	0.20	0.18	0.19
AR	CEREAL SUB	27	0.26	0.22	0.20	0.23	0.22	0.24	0.23	0.20	0.24	0.13	0.25
AR	CEREAL SUB	28	0.35	0.35	0.30	0.33	0.32	0.35	0.31	0.36	0.28	0.19	0.34
AR	CEREAL SUB	32	0.17	0.18	0.17	0.19	0.17	0.15	0.14	0.15	0.15	0.12	0.17
AR	CEREAL SUB	38	0.07	0.08	0.07	0.07	0.08	0.09	0.10	0.12	0.13	0.11	0.10

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100% AVERAGE
** STATE: AR14												
AR	PULSE & PR	14	0.76	1.05	1.39	1.57	1.70	1.94	2.47	2.75	2.82	3.74 1.97
AR	PULSE & PR	15	0.91	1.27	1.64	1.80	2.09	2.25	2.50	2.90	2.91	3.49 2.13
AR	PULSE & PR	16	0.94	1.29	1.58	1.80	2.06	2.36	2.76	2.84	3.52	4.48 2.38
AR	PULSE & PR	18	1.04	1.43	1.65	1.85	2.21	2.40	2.46	2.69	3.05	3.43 2.20
AR	PULSE & PR	19	0.67	1.06	1.22	1.42	1.63	1.84	2.08	2.39	2.61	3.43 1.87
AR	PULSE & PR	20	0.66	0.94	1.17	1.39	1.61	1.76	2.05	2.29	2.58	3.41 1.79
AR	PULSE & PR	21	0.50	0.76	0.91	1.22	1.34	1.51	1.74	1.94	2.39	3.06 1.54
AR	PULSE & PR	22	0.45	0.64	0.81	0.99	1.12	1.26	1.43	1.60	1.88	2.71 1.28
AR	PULSE & PR	23	0.69	1.01	1.18	1.31	1.46	1.64	1.82	2.05	2.31	2.96 1.63
AR	PULSE & PR	24	0.63	0.92	1.08	1.20	1.38	1.54	1.68	1.93	2.27	3.11 1.53
AR	PULSE & PR	25	0.56	0.80	0.99	1.13	1.28	1.43	1.60	1.78	2.16	2.78 1.58
AR	PULSE & PR	27	0.40	0.70	0.87	0.98	1.16	1.26	1.50	1.77	2.10	2.44 1.63
AR	PULSE & PR	28	0.48	0.71	0.89	0.98	1.13	1.27	1.43	1.69	1.88	2.10 1.34
AR	PULSE & PR	32	0.59	0.85	1.02	1.13	1.29	1.43	1.57	1.80	2.08	2.25 1.45
AR	PULSE & PR	38	0.63	0.79	0.93	1.05	1.19	1.32	1.46	1.66	1.91	2.35 1.36

LISTING OF DECILES BY COMMODITY

COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR15												
AR MILK & PR	2	0.28	0.61	0.87	1.25	1.99	2.87	5.33	6.13	8.63	17.75	5.07
AR MILK & PR	3	0.51	0.95	1.35	1.95	2.71	3.45	4.60	6.60	7.92	17.02	4.80
AR MILK & PR	4	0.48	0.86	1.19	1.97	2.20	2.84	4.11	5.34	7.56	13.81	3.91
AR MILK & PR	5	0.32	0.74	1.25	2.19	2.41	3.20	4.28	5.70	9.03	14.40	4.33
AR MILK & PR	6	0.18	0.50	0.87	2.05	2.32	2.90	4.48	5.81	7.34	14.05	3.87
AR MILK & PR	7	0.32	0.67	0.79	1.48	2.32	2.71	3.58	5.28	7.17	18.10	3.96
AR MILK & PR	8	0.47	0.74	1.33	1.48	2.10	2.77	4.29	5.41	8.46	11.19	3.90
AR MILK & PR	9	0.58	0.93	1.50	1.72	2.63	3.74	4.94	7.32	9.17	9.71	4.29
AR MILK & PR	10	0.49	1.12	1.27	2.06	2.82	3.36	4.58	6.73	9.98	21.12	5.25
AR MILK & PR	11	0.40	0.68	0.77	1.29	1.46	2.24	2.86	3.83	6.44	10.81	3.64
AR MILK & PR	13	0.33	0.66	0.76	1.30	2.17	3.06	3.86	5.05	6.91	13.57	4.10
AR MILK & PR	14	0.41	0.56	1.05	1.54	2.27	3.19	4.27	5.54	7.91	13.38	3.98
AR MILK & PR	15	0.46	0.87	1.28	1.40	2.15	3.08	4.07	5.34	8.19	11.32	3.74
AR MILK & PR	16	0.45	0.78	1.29	2.07	2.37	3.07	4.65	6.32	8.23	11.70	4.17
AR MILK & PR	17	0.50	0.86	1.37	2.05	2.24	2.90	3.50	4.39	7.30	11.01	3.75
AR MILK & PR	18	0.63	1.01	1.40	1.92	2.49	3.26	4.31	5.27	6.93	11.24	3.82
AR MILK & PR	20	0.49	0.84	1.27	1.79	2.36	2.58	3.36	4.50	6.08	11.12	3.44
AR MILK & PR	21	0.46	0.73	1.02	1.81	1.99	2.70	3.70	4.14	6.28	11.47	3.52
AR MILK & PR	22	0.46	0.72	1.03	1.45	2.10	2.36	3.30	4.67	6.90	11.83	3.46
AR MILK & PR	23	0.46	0.78	1.06	1.61	2.19	2.47	3.55	4.98	7.13	12.25	3.53
AR MILK & PR	24	0.36	0.69	1.25	1.39	2.12	3.04	3.33	4.67	6.75	12.43	3.44
AR MILK & PR	25	0.36	0.69	1.01	1.37	2.04	2.28	3.26	3.65	5.07	10.68	3.61
AR MILK & PR	27	0.26	0.69	1.08	1.23	1.85	2.01	3.06	4.51	5.37	9.31	3.56
AR MILK & PR	28	0.38	0.72	1.22	1.34	2.10	2.36	3.51	4.14	5.51	10.49	3.41
AR MILK & PR	32	0.46	0.83	1.36	1.50	2.17	3.07	4.13	5.70	7.92	11.71	4.01
AR MILK & PR	38	0.61	0.98	1.54	2.17	2.44	3.39	4.42	5.08	7.15	11.00	4.01

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR16													
AR	EDIBLE OIL	2	0.74	1.19	1.43	1.42	1.61	2.08	2.05	2.36	3.40	4.51	2.10
AR	EDIBLE OIL	3	0.59	0.92	1.22	1.45	1.63	2.01	2.30	2.85	3.34	5.15	2.13
AR	EDIBLE OIL	4	0.42	0.67	0.79	0.90	1.00	1.17	1.29	1.47	1.79	2.66	1.19
AR	EDIBLE OIL	5	0.32	0.53	0.74	0.92	1.01	1.19	1.33	1.46	2.11	3.99	1.33
AR	EDIBLE OIL	6	0.36	0.69	0.86	1.04	1.17	1.44	1.69	1.94	2.24	4.88	1.58
AR	EDIBLE OIL	7	0.35	0.56	0.66	0.78	1.03	1.26	1.40	1.58	1.81	4.18	1.25
AR	EDIBLE OIL	8	0.33	0.52	0.67	0.75	0.95	1.13	1.27	1.43	1.83	1.64	1.11
AR	EDIBLE OIL	9	0.39	0.62	0.75	0.86	1.06	1.26	1.32	1.62	1.90	2.11	1.14
AR	EDIBLE OIL	10	0.55	0.79	0.89	0.99	1.09	1.29	1.42	1.64	2.05	3.71	1.36
AR	EDIBLE OIL	11	0.46	0.66	0.75	0.95	1.07	1.26	1.44	1.75	1.94	2.70	1.38
AR	EDIBLE OIL	13	0.41	0.63	0.73	0.89	1.04	1.19	1.42	1.75	1.94	3.28	1.33
AR	EDIBLE OIL	14	0.49	0.67	0.86	1.01	1.17	1.34	1.50	1.69	2.00	3.29	1.38
AR	EDIBLE OIL	15	0.45	0.68	0.87	0.95	1.09	1.22	1.36	1.57	1.76	2.77	1.22
AR	EDIBLE OIL	16	0.54	0.73	0.97	1.14	1.31	1.45	1.62	1.86	2.12	2.69	1.45
AR	EDIBLE OIL	17	0.61	0.89	1.08	1.27	1.39	1.57	1.74	1.92	2.26	3.99	1.62
AR	EDIBLE OIL	20	0.66	0.92	1.09	1.27	1.43	1.56	1.70	1.89	2.17	4.36	1.69
AR	EDIBLE OIL	21	0.60	0.89	1.05	1.29	1.42	1.59	1.74	1.94	2.28	3.29	1.59
AR	EDIBLE OIL	22	0.54	0.76	0.94	1.04	1.15	1.29	1.43	1.61	1.81	2.57	1.32
AR	EDIBLE OIL	23	0.54	0.76	0.91	1.07	1.20	1.38	1.48	1.60	1.88	3.36	1.41
AR	EDIBLE OIL	24	0.62	0.87	1.03	1.14	1.32	1.46	1.60	1.84	2.18	3.45	1.49
AR	EDIBLE OIL	25	0.51	0.74	0.91	1.05	1.20	1.34	1.49	1.66	1.99	2.86	1.50
AR	EDIBLE OIL	27	0.61	0.94	1.12	1.28	1.47	1.61	1.85	2.11	2.51	3.89	1.68
AR	EDIBLE OIL	28	0.61	0.84	1.06	1.16	1.35	1.52	1.70	2.00	2.19	2.75	1.61
AR	EDIBLE OIL	32	0.66	0.94	1.13	1.25	1.43	1.62	1.80	2.04	2.37	2.91	1.67
AR	EDIBLE OIL	38	0.77	0.99	1.22	1.40	1.57	1.74	1.94	2.23	2.59	3.89	1.85

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR17													
AR	MEAT,EGG,F	2	0.54	0.57	0.90	0.89	0.95	1.55	1.73	1.99	2.46	2.58	1.48
AR	MEAT,EGG,F	3	0.41	0.70	0.81	1.05	1.27	1.50	2.06	2.27	2.35	4.07	1.65
AR	MEAT,EGG,F	4	0.50	0.74	0.98	1.25	1.39	1.61	1.56	1.87	2.42	3.95	1.58
AR	MEAT,EGG,F	5	0.32	0.64	0.99	1.41	1.55	1.70	1.71	2.02	2.38	3.46	1.61
AR	MEAT,EGG,F	6	0.30	0.56	0.66	0.89	1.01	1.31	1.78	2.09	2.45	4.00	1.47
AR	MEAT,EGG,F	7	0.37	0.69	0.82	1.05	1.24	1.36	1.54	1.78	2.57	2.92	1.44
AR	MEAT,EGG,F	8	0.33	0.53	0.63	0.71	1.04	1.49	1.61	2.21	2.79	3.52	1.58
AR	MEAT,EGG,F	9	0.34	0.55	0.74	0.84	1.14	1.46	1.81	2.22	3.04	4.60	1.57
AR	MEAT,EGG,F	10	0.57	0.78	0.89	1.14	1.43	1.70	1.76	2.06	2.14	2.10	1.50
AR	MEAT,EGG,F	11	0.44	0.61	0.69	0.82	0.92	1.08	1.35	1.84	2.12	2.66	1.42
AR	MEAT,EGG,F	13	0.41	0.66	0.76	0.95	1.20	1.45	1.76	2.22	3.00	2.85	1.65
AR	MEAT,EGG,F	14	0.52	0.72	0.90	1.19	1.36	1.52	1.68	1.90	2.18	2.83	1.49
AR	MEAT,EGG,F	15	0.51	0.76	0.96	1.06	1.23	1.46	1.62	1.69	2.18	2.20	1.35
AR	MEAT,EGG,F	16	0.55	0.80	0.84	0.93	1.06	1.51	1.75	2.09	2.56	2.19	1.47
AR	MEAT,EGG,F	17	0.42	0.62	0.81	1.05	1.16	1.19	1.42	2.14	2.11	3.28	1.55
AR	MEAT,EGG,F	20	0.33	0.46	0.55	0.68	0.85	0.92	1.11	1.30	1.52	2.26	1.02
AR	MEAT,EGG,F	21	0.31	0.47	0.56	0.70	0.77	0.90	1.03	1.15	1.44	1.97	0.93
AR	MEAT,EGG,F	22	0.28	0.41	0.51	0.64	0.81	0.90	1.09	1.27	1.54	2.18	0.97
AR	MEAT,EGG,F	23	0.34	0.48	0.63	0.73	0.90	1.02	1.20	1.35	1.70	2.44	1.06
AR	MEAT,EGG,F	24	0.38	0.55	0.70	0.78	0.95	1.16	1.27	1.52	1.87	2.85	1.15
AR	MEAT,EGG,F	25	0.34	0.47	0.58	0.72	0.88	0.98	1.20	1.35	1.77	2.54	1.19
AR	MEAT,EGG,F	27	0.33	0.52	0.63	0.71	0.89	0.96	1.16	1.35	1.61	2.03	1.12
AR	MEAT,EGG,F	28	0.38	0.53	0.68	0.74	0.89	1.00	1.20	1.42	1.65	2.88	1.15
AR	MEAT,EGG,F	32	0.39	0.56	0.69	0.77	0.92	1.07	1.22	1.40	1.64	2.16	1.11
AR	MEAT,EGG,F	38	0.32	0.46	0.59	0.74	0.83	1.03	1.21	1.39	1.76	2.60	1.12

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR1B													
AR	VEG,FR,NUT	19	0.74	1.02	1.17	1.34	1.54	1.72	1.85	2.12	2.51	3.51	1.77
AR	VEG,FR,NUT	20	0.77	1.04	1.20	1.36	1.55	1.69	1.96	2.31	2.71	3.83	1.87
AR	VEG,FR,NUT	21	0.73	1.03	1.19	1.35	1.48	1.65	1.86	2.07	2.52	3.45	1.72
AR	VEG,FR,NUT	22	0.70	0.94	1.15	1.29	1.43	1.60	1.78	2.00	2.47	3.67	1.72
AR	VEG,FR,NUT	23	0.71	0.94	1.14	1.33	1.48	1.67	1.86	2.04	2.37	3.09	1.75
AR	VEG,FR,NUT	24	0.77	1.10	1.29	1.43	1.68	1.93	2.11	2.45	2.98	4.67	1.98
AR	VEG,FR,NUT	25	0.77	1.02	1.19	1.34	1.50	1.68	1.91	2.14	2.68	4.05	2.02
AR	VEG,FR,NUT	27	0.89	1.22	1.42	1.61	1.81	1.97	2.24	2.60	3.10	4.02	2.30
AR	VEG,FR,NUT	28	0.91	1.20	1.42	1.56	1.76	1.98	2.20	2.59	2.91	4.18	2.17
AR	VEG,FR,NUT	32	0.97	1.32	1.54	1.71	1.92	2.13	2.37	2.73	3.25	4.04	2.27
AR	VEG,FR,NUT	38	1.16	1.48	1.78	2.03	2.28	2.55	2.87	3.29	3.88	5.26	2.72

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR21													
AR	SUGAR	2	0.25	0.46	0.77	0.78	0.93	1.35	1.56	1.79	2.93	5.08	1.69
AR	SUGAR	3	0.27	0.45	0.67	0.92	1.14	1.45	1.85	2.36	2.79	5.04	1.87
AR	SUGAR	4	0.30	0.42	0.50	0.71	0.79	0.93	1.36	1.70	2.04	3.28	1.16
AR	SUGAR	5	0.25	0.42	0.63	0.96	1.06	1.29	1.53	1.70	2.37	2.64	1.29
AR	SUGAR	6	0.18	0.38	0.58	0.92	1.04	1.37	1.73	2.26	2.92	7.14	1.79
AR	SUGAR	7	0.22	0.38	0.44	0.66	0.97	1.12	1.33	1.62	2.79	3.90	1.29
AR	SUGAR	8	0.22	0.35	0.49	0.55	0.72	0.95	1.24	1.50	2.07	2.34	1.11
AR	SUGAR	9	0.18	0.29	0.50	0.58	0.82	0.98	1.38	1.63	2.05	2.15	1.08
AR	SUGAR	10	0.25	0.46	0.52	0.66	0.84	1.05	1.21	1.55	2.22	3.88	1.24
AR	SUGAR	11	0.27	0.38	0.43	0.57	0.65	0.86	1.03	1.32	1.82	3.15	1.16
AR	SUGAR	13	0.22	0.42	0.48	0.67	0.89	1.12	1.43	1.80	2.15	4.07	1.37
AR	SUGAR	14	0.44	0.61	0.80	0.91	1.09	1.35	1.69	2.05	2.76	4.72	1.61
AR	SUGAR	15	0.33	0.51	0.87	0.95	1.18	1.31	1.66	2.13	2.58	4.21	1.51
AR	SUGAR	16	0.36	0.50	0.72	1.00	1.14	1.35	1.69	2.05	2.51	3.85	1.51
AR	SUGAR	17	0.35	0.56	0.72	1.03	1.13	1.37	1.53	1.88	2.66	4.70	1.58
AR	SUGAR	19	0.38	0.60	0.69	0.87	1.09	1.27	1.47	1.69	2.21	4.07	1.44
AR	SUGAR	20	0.39	0.57	0.74	0.88	1.02	1.11	1.28	1.53	1.94	3.32	1.29
AR	SUGAR	21	0.41	0.55	0.65	0.89	0.98	1.19	1.45	1.62	2.16	3.65	1.37
AR	SUGAR	22	0.40	0.58	0.76	0.93	1.12	1.26	1.57	2.07	2.67	4.46	1.59
AR	SUGAR	23	0.43	0.63	0.84	1.06	1.25	1.41	1.76	2.31	3.17	6.06	1.85
AR	SUGAR	24	0.33	0.50	0.70	0.78	0.96	0.57	0.63	0.88	2.04	3.45	1.23
AR	SUGAR	25	0.32	0.49	0.63	0.75	0.92	1.03	1.27	1.42	1.77	3.17	1.33
AR	SUGAR	27	0.19	0.36	0.47	0.53	0.68	0.74	0.96	1.26	1.50	3.18	1.05
AR	SUGAR	28	0.29	0.43	0.58	0.64	0.81	0.90	1.11	1.31	1.54	2.32	1.04
AR	SUGAR	32	0.36	0.52	0.64	0.71	0.84	1.00	1.19	1.48	1.90	2.78	1.17
AR	SUGAR	38	0.43	0.59	0.74	0.89	1.00	1.19	1.41	1.62	2.01	3.26	1.32

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERASE
** STATE: AR22													
AR	SALT,SPICE	2	0.15	0.20	0.21	0.21	0.22	0.23	0.21	0.24	0.25	0.33	0.23
AR	SALT,SPICE	3	0.16	0.21	0.23	0.22	0.23	0.26	0.25	0.27	0.29	0.28	0.23
AR	SALT,SPICE	4	0.11	0.14	0.16	0.15	0.17	0.17	0.14	0.14	0.16	0.20	0.15
AR	SALT,SPICE	5	0.12	0.15	0.15	0.12	0.14	0.15	0.16	0.15	0.14	0.16	0.15
AR	SALT,SPICE	6	0.13	0.15	0.17	0.16	0.18	0.18	0.17	0.16	0.20	0.23	0.18
AR	SALT,SPICE	7	0.11	0.13	0.16	0.14	0.13	0.13	0.13	0.14	0.14	0.14	0.13
AR	SALT,SPICE	8	0.09	0.13	0.14	0.16	0.15	0.13	0.14	0.16	0.16	0.10	0.13
AR	SALT,SPICE	9	0.09	0.14	0.14	0.17	0.17	0.17	0.17	0.17	0.18	0.17	0.15
AR	SALT,SPICE	10	0.13	0.15	0.17	0.15	0.15	0.16	0.18	0.20	0.18	0.16	0.15
AR	SALT,SPICE	11	0.10	0.11	0.13	0.12	0.14	0.16	0.16	0.18	0.15	0.12	0.15
AR	SALT,SPICE	13	0.11	0.12	0.14	0.13	0.14	0.13	0.15	0.18	0.14	0.16	0.13
AR	SALT,SPICE	14	0.08	0.12	0.12	0.13	0.13	0.13	0.13	0.14	0.14	0.15	0.13
AR	SALT,SPICE	15	0.08	0.10	0.09	0.10	0.11	0.12	0.12	0.13	0.12	0.12	0.11
AR	SALT,SPICE	16	0.09	0.11	0.12	0.11	0.12	0.12	0.13	0.12	0.13	0.16	0.11
AR	SALT,SPICE	17	0.09	0.11	0.12	0.12	0.13	0.14	0.16	0.17	0.15	0.17	0.14
AR	SALT,SPICE	19	0.08	0.08	0.10	0.09	0.10	0.11	0.11	0.12	0.11	0.10	0.10
AR	SALT,SPICE	20	0.73	0.95	1.07	1.14	1.21	1.32	1.39	1.47	1.58	2.01	1.31
AR	SALT,SPICE	21	0.82	1.09	1.21	1.28	1.41	1.43	1.49	1.67	1.89	2.20	1.44
AR	SALT,SPICE	22	0.62	0.79	0.92	0.98	1.00	1.13	1.13	1.17	1.26	1.45	1.07
AR	SALT,SPICE	23	0.70	0.92	1.07	1.14	1.17	1.33	1.37	1.42	1.56	2.20	1.30
AR	SALT,SPICE	24	0.77	1.06	1.16	1.28	1.36	1.41	1.55	1.66	1.86	2.58	1.44
AR	SALT,SPICE	25	0.72	0.92	1.08	1.20	1.25	1.40	1.45	1.62	1.82	2.23	1.44
AR	SALT,SPICE	27	0.72	0.93	1.03	1.17	1.23	1.33	1.41	1.47	1.75	1.57	1.39
AR	SALT,SPICE	28	0.49	0.86	0.96	1.05	1.13	1.27	1.30	1.53	1.54	1.82	1.25
AR	SALT,SPICE	32	0.76	0.97	1.06	1.17	1.25	1.31	1.39	1.54	1.74	1.86	1.35
AR	SALT,SPICE	38	0.63	0.75	0.83	0.90	1.01	1.06	1.14	1.31	1.45	1.67	1.10

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR25													
AR	BEV,REF.	20	0.43	0.62	0.69	0.73	0.80	0.87	1.01	1.20	1.49	2.75	1.20
AR	BEV,REF.	21	0.49	0.61	0.68	0.82	0.90	1.00	1.12	1.25	1.55	3.01	1.14
AR	BEV,REF.	22	0.41	0.60	0.71	0.79	0.83	0.94	1.05	1.21	1.56	3.07	1.12
AR	BEV,REF.	23	0.30	0.41	0.59	0.70	0.71	0.80	1.03	1.29	1.62	3.57	1.10
AR	BEV,REF.	24	0.42	0.57	0.63	0.70	0.85	0.97	1.07	1.30	1.85	3.63	1.15
AR	BEV,REF.	25	0.29	0.43	0.54	0.66	0.78	0.88	1.00	1.12	1.35	2.91	1.12
AR	BEV,REF.	27	0.30	0.46	0.55	0.62	0.73	0.80	0.98	1.23	1.47	2.82	1.09
AR	BEV,REF.	28	0.30	0.40	0.50	0.55	0.70	0.79	0.95	1.12	1.31	3.91	1.01
AR	BEV,REF.	32	0.32	0.46	0.59	0.65	0.78	0.93	1.09	1.35	1.77	2.97	1.11
AR	BEV,REF.	38	0.36	0.51	0.69	0.87	0.97	1.23	1.50	1.72	2.25	4.19	1.44

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR26													
AR	OTHER FOOD	2	1.97	2.98	4.07	4.40	5.42	7.20	6.71	7.71	10.71	15.64	6.80
AR	OTHER FOOD	3	2.23	3.43	4.46	5.52	6.26	7.32	8.14	9.32	10.83	15.46	7.24
AR	OTHER FOOD	4	2.30	3.29	4.23	4.95	5.50	6.03	6.39	7.35	8.97	12.33	5.99
AR	OTHER FOOD	5	2.03	2.92	3.86	4.44	4.89	5.45	6.21	7.32	8.40	12.20	5.71
AR	OTHER FOOD	6	2.29	3.71	4.61	5.38	6.08	6.62	8.02	9.05	11.72	17.85	7.46
AR	OTHER FOOD	7	1.89	2.87	3.40	4.09	4.49	4.93	5.77	6.57	8.90	10.87	5.25
AR	OTHER FOOD	8	2.02	3.18	3.60	4.00	4.33	4.77	6.03	7.30	8.34	10.12	5.37
AR	OTHER FOOD	9	2.14	3.41	3.97	4.54	5.14	5.87	6.84	8.14	9.90	11.46	5.87
AR	OTHER FOOD	10	2.85	4.08	4.64	5.39	5.96	6.81	7.52	8.83	10.59	12.63	6.79
AR	OTHER FOOD	11	2.39	3.12	3.51	3.94	4.47	5.09	5.90	6.79	8.07	10.32	5.75
AR	OTHER FOOD	13	2.18	3.10	3.59	4.24	5.00	5.43	6.13	7.30	8.51	12.67	5.88
AR	OTHER FOOD	14	2.49	3.42	3.88	4.42	5.01	5.64	6.29	7.20	8.76	13.33	5.95
AR	OTHER FOOD	15	2.50	3.38	4.11	4.51	5.22	5.86	6.57	7.33	8.11	11.10	5.69
AR	OTHER FOOD	16	2.56	3.37	4.11	3.34	3.82	4.70	7.15	8.16	10.11	13.23	6.51
AR	OTHER FOOD	17	2.66	3.75	4.56	5.21	5.71	6.57	7.45	8.30	9.91	13.67	6.82
AR	OTHER FOOD	18	3.21	4.48	5.46	6.28	7.35	8.51	9.67	11.18	13.59	19.01	8.78

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR27													
AR	TOTAL FOOD	2	13.91	21.54	26.57	30.92	34.23	39.39	44.63	51.33	58.11	82.99	40.74
AR	TOTAL FOOD	3	15.27	22.98	27.48	32.52	37.69	42.30	45.60	53.04	60.87	84.82	41.85
AR	TOTAL FOOD	4	14.91	21.82	27.15	31.61	35.14	40.05	42.77	48.24	57.80	71.13	38.50
AR	TOTAL FOOD	5	14.07	20.44	25.73	30.12	33.21	36.78	40.06	45.97	50.74	61.03	35.32
AR	TOTAL FOOD	6	14.38	22.89	27.41	31.48	35.61	39.47	45.20	48.64	56.09	82.18	39.94
AR	TOTAL FOOD	7	14.47	20.05	23.74	27.06	30.87	32.92	36.03	40.93	45.24	60.91	31.96
AR	TOTAL FOOD	8	12.01	18.93	22.37	24.92	28.22	31.06	35.08	39.59	47.42	46.35	30.63
AR	TOTAL FOOD	9	13.05	20.84	24.63	28.15	32.37	36.32	39.89	44.97	53.34	52.11	33.31
AR	TOTAL FOOD	10	17.18	23.60	26.85	31.34	35.23	38.73	42.94	49.95	56.72	78.00	39.01
AR	TOTAL FOOD	11	15.62	20.67	23.24	26.47	30.01	33.47	36.45	41.13	46.48	49.63	34.38
AR	TOTAL FOOD	13	14.47	20.69	23.97	27.62	30.75	33.71	37.84	43.70	48.12	61.40	34.76
AR	TOTAL FOOD	14	15.49	21.26	25.57	29.00	32.11	35.33	39.65	44.11	48.75	64.27	35.13
AR	TOTAL FOOD	15	16.56	22.23	26.01	28.56	32.47	35.55	38.40	42.87	47.25	58.72	34.02
AR	TOTAL FOOD	16	16.87	22.18	26.10	28.81	32.96	36.58	40.91	43.10	51.43	61.79	36.09
AR	TOTAL FOOD	17	17.24	23.22	27.39	30.39	33.33	37.36	41.11	44.28	48.95	62.48	36.65
AR	TOTAL FOOD	18	17.19	22.72	26.12	28.56	31.52	34.63	38.19	41.32	47.36	54.88	34.29
AR	TOTAL FOOD	19	14.30	18.57	21.34	23.84	25.81	27.42	28.76	33.03	32.60	38.02	26.77
AR	TOTAL FOOD	20	16.33	21.94	25.19	28.29	31.66	34.61	38.30	42.25	46.93	62.20	35.20
AR	TOTAL FOOD	21	14.91	20.49	23.87	27.58	30.33	33.57	36.89	41.18	48.69	62.58	33.93
AR	TOTAL FOOD	22	13.87	18.88	22.42	25.12	27.71	31.14	33.75	37.13	43.12	60.78	31.50
AR	TOTAL FOOD	23	14.42	19.45	22.94	25.77	28.04	31.65	34.18	37.06	42.62	62.66	31.79
AR	TOTAL FOOD	24	14.73	20.26	23.10	25.57	28.44	30.94	33.86	37.68	43.36	62.78	31.25
AR	TOTAL FOOD	25	13.70	17.92	20.93	23.50	25.44	28.44	30.86	34.52	40.16	53.14	30.93
AR	TOTAL FOOD	27	14.68	20.13	22.90	26.03	28.56	31.10	34.48	38.22	45.55	46.79	34.40
AR	TOTAL FOOD	28	15.98	21.15	24.30	26.71	29.79	33.46	36.28	42.75	45.68	52.01	34.60
AR	TOTAL FOOD	32	14.88	19.61	22.21	24.58	27.12	29.47	32.00	35.80	41.10	46.91	30.40
AR	TOTAL FOOD	38	15.09	18.69	21.76	24.56	27.62	30.05	32.73	37.61	42.71	51.81	30.99

LISTING OF DECILES BY COMMODITY

COMMODITY		ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR30													
AR	TOTAL EXP.	2	17.93	27.29	34.72	40.66	45.92	53.20	62.50	71.68	87.55	143.50	60.16
AR	TOTAL EXP.	3	19.76	29.74	36.12	42.16	48.64	55.80	62.42	73.83	86.95	147.50	60.07
AR	TOTAL EXP.	4	21.67	31.64	39.96	46.41	51.59	59.22	68.63	79.66	96.96	165.35	64.37
AR	TOTAL EXP.	5	20.47	29.15	37.10	44.24	48.77	54.78	62.10	73.57	88.15	142.38	59.13
AR	TOTAL EXP.	6	19.48	31.05	37.45	43.36	49.05	55.07	64.71	74.04	89.05	146.72	60.11
AR	TOTAL EXP.	7	18.29	26.34	31.18	35.42	40.30	45.06	51.03	60.25	75.49	124.57	48.65
AR	TOTAL EXP.	8	15.43	24.30	29.05	32.37	37.36	42.56	49.41	58.19	72.76	121.65	46.55
AR	TOTAL EXP.	9	16.77	26.78	31.95	36.51	42.39	48.59	55.69	66.08	79.99	125.52	50.13
AR	TOTAL EXP.	10	21.80	30.56	34.77	40.96	46.41	53.10	60.81	72.09	87.68	151.32	58.07
AR	TOTAL EXP.	11	19.12	25.44	28.60	32.73	37.11	41.89	47.05	54.31	66.16	112.74	48.70
AR	TOTAL EXP.	13	18.05	25.86	27.95	35.18	40.35	45.19	51.42	60.93	74.20	125.55	51.26
AR	TOTAL EXP.	14	19.56	26.85	32.46	37.33	42.20	47.69	55.32	63.67	77.18	137.55	52.76
AR	TOTAL EXP.	15	21.43	29.10	33.54	36.83	42.21	48.00	53.83	61.59	77.51	128.05	51.10
AR	TOTAL EXP.	16	20.35	27.15	32.41	36.05	41.23	46.81	53.90	61.52	75.93	126.46	51.53
AR	TOTAL EXP.	17	20.88	28.38	33.85	38.41	42.12	47.81	54.05	61.63	74.64	125.22	52.26
AR	TOTAL EXP.	18	21.37	28.40	33.02	36.69	41.20	46.39	52.65	59.01	71.14	118.22	49.51
AR	TOTAL EXP.	19	20.70	26.01	32.18	36.74	41.33	45.91	50.62	58.14	68.11	116.14	49.73
AR	TOTAL EXP.	20	19.85	26.64	30.90	35.22	39.90	43.61	49.11	55.85	65.40	112.65	47.97
AR	TOTAL EXP.	21	18.02	25.14	28.97	33.91	37.30	41.67	46.98	52.43	64.30	100.25	44.79
AR	TOTAL EXP.	22	17.10	23.43	28.00	31.58	35.29	39.65	43.86	49.87	60.93	97.03	42.72
AR	TOTAL EXP.	23	17.69	23.93	28.32	32.29	35.75	40.35	44.79	50.48	61.53	107.42	44.08
AR	TOTAL EXP.	24	17.90	24.73	28.63	31.70	35.88	40.24	44.03	50.99	62.22	104.99	42.89
AR	TOTAL EXP.	25	16.52	21.82	25.59	29.06	32.00	35.77	39.83	44.54	54.05	84.65	42.04
AR	TOTAL EXP.	27	17.82	24.63	28.33	32.19	35.99	39.19	44.86	52.16	62.16	108.44	47.48
AR	TOTAL EXP.	28	18.82	24.91	28.81	31.66	35.88	40.30	47.04	55.42	62.22	100.17	44.89
AR	TOTAL EXP.	32	18.14	24.13	27.75	30.71	34.42	38.34	42.71	49.66	60.68	122.03	44.37
AR	TOTAL EXP.	38	18.25	23.06	27.69	31.67	35.62	39.89	44.94	51.64	62.03	98.96	44.06

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AR31													
AR	NON FOOD	2	4.02	5.75	8.15	9.74	11.69	13.81	17.87	20.55	29.45	60.50	19.42
AR	NON FOOD	3	4.48	6.76	8.63	9.64	10.95	13.50	16.82	20.79	26.08	62.68	18.23
AR	NON FOOD	4	6.76	9.83	12.81	14.80	16.45	19.17	25.85	31.42	39.16	94.22	25.87
AR	NON FOOD	5	6.40	8.71	11.37	14.12	15.57	18.00	22.04	27.59	37.41	81.35	23.81
AR	NON FOOD	6	5.10	8.15	10.04	11.88	13.44	15.60	19.51	25.41	32.96	64.54	20.17
AR	NON FOOD	7	3.82	6.28	7.44	8.36	9.44	12.15	14.99	19.31	30.25	63.66	16.69
AR	NON FOOD	8	3.41	5.38	6.68	7.45	9.14	11.51	14.33	18.60	25.34	75.29	15.93
AR	NON FOOD	9	3.72	5.95	7.32	8.36	10.02	12.27	15.80	21.12	26.64	73.41	16.82
AR	NON FOOD	10	4.63	6.96	7.92	9.62	11.18	14.37	17.88	22.14	30.96	73.33	19.06
AR	NON FOOD	11	3.50	4.77	5.37	6.26	7.10	8.43	10.59	13.19	19.68	63.11	14.31
AR	NON FOOD	13	3.58	5.16	5.98	7.57	9.60	11.49	13.59	17.23	26.08	64.15	16.50
AR	NON FOOD	14	4.07	5.59	6.89	8.33	10.09	12.36	15.67	19.55	28.43	73.28	17.63
AR	NON FOOD	15	4.87	6.87	7.53	8.27	9.74	12.45	15.42	18.72	30.26	69.33	17.07
AR	NON FOOD	16	3.48	4.97	6.31	7.23	8.27	10.23	12.99	18.42	24.50	64.66	15.45
AR	NON FOOD	17	3.64	5.15	6.46	8.02	8.79	10.45	12.94	17.35	25.69	62.74	15.62
AR	NON FOOD	18	4.18	5.67	6.91	8.12	9.68	11.76	14.46	17.69	23.78	63.34	15.22
AR	NON FOOD	19	6.40	9.44	10.84	12.90	15.53	18.50	21.87	25.11	35.52	78.12	22.96
AR	NON FOOD	20	3.52	4.70	5.71	6.93	8.24	9.00	10.82	13.60	18.47	50.45	12.78
AR	NON FOOD	21	3.12	4.65	5.09	6.34	6.97	8.11	10.09	11.26	15.61	37.67	10.86
AR	NON FOOD	22	3.23	4.54	5.58	6.46	7.58	8.51	10.11	12.74	17.81	36.26	11.22
AR	NON FOOD	23	3.27	4.48	5.38	6.52	7.71	8.70	10.61	13.42	18.91	44.76	12.30
AR	NON FOOD	24	3.18	4.46	5.53	6.12	7.45	9.29	10.17	13.31	18.86	42.21	11.64
AR	NON FOOD	25	2.82	3.89	4.66	5.56	6.56	7.33	8.96	10.02	13.90	31.51	11.11
AR	NON FOOD	27	3.13	4.50	5.43	6.17	7.43	8.09	10.38	13.94	16.61	61.66	13.08
AR	NON FOOD	28	2.83	3.76	4.51	4.95	6.09	6.84	10.76	12.67	16.54	48.16	10.29
AR	NON FOOD	32	3.26	4.52	5.54	6.13	7.30	8.86	10.71	13.86	19.58	75.12	13.97
AR	NON FOOD	38	3.16	4.37	5.93	7.11	8.00	9.84	12.21	14.03	19.32	47.16	13.06

LISTINGS OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU 1													
AU	FOODGRAINS	8	11.67	13.69	14.91	15.56	17.01	17.22	17.41	17.46	17.02	20.38	15.36
AU	FOODGRAINS	9	11.75	14.10	15.52	15.40	16.87	18.51	18.87	16.42	18.05	22.17	15.90
AU	FOODGRAINS	10	13.18	15.64	16.99	17.08	18.37	19.27	19.94	21.23	18.39	22.38	17.03
AU	FOODGRAINS	11	10.46	13.03	14.68	14.95	16.25	16.33	17.06	17.85	16.33	18.65	14.91
AU	FOODGRAINS	13	10.37	13.43	13.11	15.55	15.70	14.84	15.58	15.67	16.82	18.00	14.07
AU	FOODGRAINS	14	11.73	14.88	15.89	16.67	16.91	17.77	17.78	17.94	19.54	22.36	16.18
AU	FOODGRAINS	15	11.96	15.01	15.74	17.03	17.21	17.48	17.94	18.73	21.02	25.75	16.69
AU	FOODGRAINS	16	12.23	15.25	16.50	16.95	17.72	18.57	18.45	18.06	18.89	21.39	16.70
AU	FOODGRAINS	17	11.62	14.71	15.61	16.58	17.00	16.92	16.94	17.04	16.78	9.13	15.88
AU	FOODGRAINS	18	11.74	13.95	15.41	16.00	16.14	15.90	16.40	17.01	17.08	20.06	15.76
AU	FOODGRAINS	19	10.47	13.24	14.14	14.94	14.85	16.63	17.08	17.35	17.03	19.67	14.91
AU	FOODGRAINS	20	10.20	12.88	13.87	14.77	14.72	14.23	16.83	16.62	16.07	17.29	14.10
AU	FOODGRAINS	21	9.56	11.78	13.16	13.47	14.98	15.22	15.25	14.22	10.47	19.78	13.86
AU	FOODGRAINS	22	8.15	10.57	11.31	12.02	12.23	14.03	14.06	13.32	9.97	19.16	12.59
AU	FOODGRAINS	23	9.74	12.53	13.26	14.07	14.34	16.47	16.41	15.76	11.78	21.88	14.29
AU	FOODGRAINS	24	9.94	12.49	13.46	13.94	16.14	15.97	15.24	10.34	13.28	26.59	14.38
AU	FOODGRAINS	25	10.09	12.49	13.44	13.84	16.00	15.66	15.09	17.21	13.16	25.09	14.57
AU	FOODGRAINS	27	10.02	12.26	13.39	15.38	15.26	14.54	16.04	15.63	15.06	11.96	15.12
AU	FOODGRAINS	28	10.35	12.55	13.45	14.91	14.84	15.98	15.73	18.98	17.83	14.92	16.00
AU	FOODGRAINS	32	10.17	12.94	13.88	14.40	14.75	14.57	14.06	15.33	15.73	13.96	14.44
AU	FOODGRAINS	38	9.38	11.47	12.18	12.70	12.99	12.74	14.54	14.98	15.77	18.50	14.41

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU 2													
AU	CEREALS	14	10.40	13.41	14.21	14.79	15.14	15.90	15.68	15.69	17.13	19.28	14.28
AU	CEREALS	15	10.17	12.81	13.38	14.44	14.56	14.65	14.84	15.43	17.39	21.19	13.94
AU	CEREALS	16	10.44	13.01	14.08	14.49	15.14	15.78	15.48	15.12	15.74	17.58	14.07
AU	CEREALS	17	10.37	13.23	14.03	14.85	15.33	15.36	15.33	15.38	15.18	8.28	14.33
AU	CEREALS	18	10.45	12.37	13.60	14.04	14.14	13.94	14.24	14.60	14.58	16.93	13.70
AU	CEREALS	19	9.57	12.02	12.81	13.49	13.26	14.84	15.07	15.11	14.69	16.67	13.21
AU	CEREALS	20	9.17	11.58	12.39	13.09	13.05	12.49	14.78	14.37	13.67	14.45	12.33
AU	CEREALS	21	8.67	10.66	11.88	12.09	13.44	13.53	13.35	12.22	8.84	16.69	12.20
AU	CEREALS	22	7.67	9.98	10.64	11.24	11.34	13.01	12.91	12.02	8.75	16.80	11.51
AU	CEREALS	23	8.52	10.99	11.57	12.23	12.37	14.21	14.08	13.38	9.81	18.22	12.41
AU	CEREALS	24	8.94	11.22	12.08	12.41	14.37	14.07	13.27	8.73	11.21	22.44	12.59
AU	CEREALS	25	9.02	11.16	11.94	12.19	14.09	13.70	13.04	14.88	11.09	21.13	12.65
AU	CEREALS	27	8.93	10.83	11.70	13.43	13.14	12.29	13.55	12.94	12.18	9.21	12.75
AU	CEREALS	28	8.58	10.40	11.05	12.25	12.04	12.96	12.58	15.19	13.94	11.38	12.85
AU	CEREALS	32	9.85	12.42	13.21	13.51	13.67	13.32	12.63	13.77	13.87	11.74	13.16
AU	CEREALS	38	9.05	11.00	11.52	12.01	12.13	11.71	13.36	13.57	14.02	16.11	13.28

LISTING OF DECILES BY COMMODITY

COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU 3												
AU RICE & PR	14	3.81	5.23	6.83	7.65	8.38	9.63	8.98	8.64	9.69	10.69	7.53
AU RICE & PR	15	4.75	6.27	6.62	7.67	8.42	8.74	9.17	9.37	10.28	12.59	7.78
AU RICE & PR	16	4.60	6.21	7.85	8.05	8.56	9.44	9.05	8.62	8.88	9.55	7.75
AU RICE & PR	17	5.59	6.96	7.85	8.79	9.34	9.57	9.81	9.73	9.47	5.25	8.73
AU RICE & PR	19	5.66	7.31	7.60	8.01	8.04	9.00	9.14	9.16	9.10	10.03	7.89
AU RICE & PR	27	4.45	5.59	6.23	7.15	7.07	6.78	7.48	7.36	7.04	5.14	6.99
AU RICE & PR	28	4.72	6.02	6.74	7.48	7.41	7.97	7.77	9.38	8.85	7.63	7.91
AU RICE & PR	32	4.92	6.36	6.93	7.25	7.45	7.28	6.86	7.49	7.43	6.47	7.08

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU 4													
AU	WHEAT & PR	14	2.78	3.96	3.31	3.17	3.27	3.38	4.25	4.83	5.42	6.78	3.75
AU	WHEAT & PR	15	2.65	3.16	3.26	3.64	3.87	4.27	4.36	4.33	5.51	7.81	4.04
AU	WHEAT & PR	16	2.85	3.72	3.93	4.22	4.65	4.69	4.75	5.13	6.02	7.62	4.61
AU	WHEAT & PR	17	2.87	4.25	4.29	4.27	4.50	4.76	4.75	5.03	5.45	3.16	4.60
AU	WHEAT & PR	19	2.60	3.28	3.76	4.16	4.25	4.76	5.01	5.41	5.55	6.74	4.37
AU	WHEAT & PR	27	3.34	4.03	4.47	5.14	5.26	5.07	5.59	5.47	5.39	4.58	5.25
AU	WHEAT & PR	28	3.22	4.37	4.92	5.45	5.70	6.14	6.23	7.52	7.19	6.10	6.11
AU	WHEAT & PR	32	3.00	4.12	4.54	4.76	4.87	4.86	4.82	5.25	5.43	4.71	4.79

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU 5													
AU	JAWAR & PR	14	1.87	1.89	1.60	1.65	1.57	1.08	0.76	0.67	0.65	0.46	1.22
AU	JAWAR & PR	15	1.21	1.55	1.87	1.77	1.09	0.72	0.59	0.76	0.81	0.48	1.04
AU	JAWAR & PR	16	1.92	1.91	1.45	1.42	1.00	0.75	0.76	0.69	0.49	0.27	0.94
AU	JAWAR & PR	17	1.50	1.62	1.63	1.48	1.30	1.11	0.80	0.73	0.55	0.19	1.02
AU	JAWAR & PR	19	0.77	0.84	0.85	0.82	0.61	0.68	0.52	0.38	0.26	0.29	0.60
AU	JAWAR & PR	27	0.88	1.01	0.94	1.08	0.87	0.64	0.71	0.51	0.34	0.14	0.73
AU	JAWAR & PR	28	1.18	1.09	0.90	1.00	0.77	0.83	0.65	0.79	0.53	0.16	0.82
AU	JAWAR & PR	32	1.23	1.15	0.96	0.73	0.60	0.48	0.37	0.40	0.33	0.14	0.63

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU 6													
AU	BAJRA & PR	14	0.37	0.81	0.73	0.59	0.47	0.47	0.39	0.27	0.24	0.26	0.42
AU	BAJRA & PR	15	0.26	0.43	0.61	0.54	0.54	0.47	0.30	0.47	0.43	0.18	0.38
AU	BAJRA & PR	16	0.14	0.25	0.28	0.29	0.40	0.36	0.36	0.36	0.27	0.24	0.30
AU	BAJRA & PR	17	0.12	0.23	0.26	0.36	0.40	0.34	0.29	0.24	0.27	0.11	0.27
AU	BAJRA & PR	19	0.32	0.36	0.41	0.47	0.44	0.49	0.44	0.35	0.23	0.18	0.35
AU	BAJRA & PR	27	0.26	0.32	0.33	0.38	0.39	0.35	0.39	0.30	0.19	0.06	0.31
AU	BAJRA & PR	28	0.46	0.49	0.36	0.40	0.33	0.35	0.33	0.40	0.27	0.04	0.36
AU	BAJRA & PR	32	0.17	0.19	0.23	0.25	0.24	0.22	0.18	0.20	0.15	0.06	0.19

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU 7													
AU	MAIZE & PR	14	0.20	0.20	0.19	0.16	0.07	0.08	0.15	0.11	0.03	0.02	0.12
AU	MAIZE & PR	15	0.20	0.29	0.12	0.13	0.17	0.10	0.07	0.06	0.04	0.01	0.11
AU	MAIZE & PR	16	0.23	0.23	0.07	0.11	0.18	0.17	0.09	0.08	0.09	0.03	0.12
AU	MAIZE & PR	17	0.07	0.13	0.12	0.09	0.07	0.04	0.04	0.03	0.03	0.02	0.06
AU	MAIZE & PR	19	0.16	0.17	0.14	0.11	0.13	0.14	0.15	0.09	0.06	0.05	0.12
AU	MAIZE & PR	27	0.29	0.30	0.23	0.26	0.20	0.13	0.15	0.09	0.06	0.04	0.18
AU	MAIZE & PR	28	0.17	0.15	0.12	0.13	0.11	0.12	0.09	0.10	0.06	0.02	0.11
AU	MAIZE & PR	32	0.13	0.13	0.09	0.07	0.06	0.05	0.04	0.04	0.04	0.02	0.06

LISTING OF DECILES BY COMMODITY

COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU 8												
AU RAGI & PR	14	0.10	0.13	0.37	0.38	0.30	0.24	0.10	0.09	0.08	0.03	0.18
AU RAGI & PR	15	0.21	0.14	0.23	0.21	0.19	0.14	0.14	0.11	0.05	0.06	0.15
AU RAGI & PR	16	0.13	0.17	0.13	0.14	0.16	0.21	0.31	0.20	0.06	0.08	0.16
AU RAGI & PR	17	0.19	0.21	0.15	0.17	0.19	0.12	0.19	0.17	0.08	0.01	0.14
AU RAGI & PR	19	0.08	0.12	0.12	0.10	0.08	0.09	0.16	0.15	0.04	0.04	0.11
AU RAGI & PR	27	0.19	0.18	0.17	0.20	0.16	0.11	0.13	0.11	0.07	0.02	0.14
AU RAGI & PR	28	0.21	0.14	0.11	0.12	0.12	0.12	0.11	0.14	0.09	0.02	0.12
AU RAGI & PR	32	0.16	0.18	0.17	0.15	0.14	0.12	0.09	0.09	0.07	0.04	0.12

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU 9													
AU	BARLEY &PR	14	0.23	0.13	0.18	0.26	0.24	0.18	0.16	0.11	0.06	0.01	0.15
AU	BARLEY &PR	15	0.41	0.44	0.19	0.13	0.10	0.07	0.07	0.15	0.17	0.03	0.16
AU	BARLEY &PR	16	0.25	0.19	0.11	0.07	0.04	0.08	0.09	0.04	0.02	0.02	0.09
AU	BARLEY &PR	17	0.22	0.23	0.18	0.14	0.09	0.09	0.08	0.08	0.05	0.00	0.10
AU	BARLEY &PR	19	0.06	0.07	0.07	0.03	0.02	0.02	0.05	0.05	0.03	0.03	0.05
AU	BARLEY &PR	27	0.06	0.06	0.06	0.07	0.07	0.05	0.05	0.04	0.03	0.03	0.06
AU	BARLEY &PR	28	0.04	0.03	0.04	0.04	0.05	0.05	0.04	0.05	0.01	0.00	0.04
AU	BARLEY &PR	32	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.01	0.00	0.02

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU10													
AU	SM. MILLET	14	0.02	0.00	0.01	0.01	0.02	0.03	0.01	0.00	0.00	0.01	0.02
AU	SM. MILLET	15	0.02	0.07	0.07	0.03	0.01	0.00	0.00	0.00	0.01	0.06	0.02
AU	SM. MILLET	16	0.01	0.00	0.00	0.06	0.06	0.01	0.02	0.02	0.01	0.00	0.02
AU	SM. MILLET	17	0.09	0.03	0.02	0.01	0.02	0.04	0.05	0.02	0.00	0.00	0.02
AU	SM. MILLET	19	0.01	0.04	0.05	0.03	0.02	0.02	0.02	0.02	0.01	0.00	0.03
AU	SM. MILLET	27	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.00	0.01
AU	SM. MILLET	28	0.02	0.01	0.00	0.00	0.01	0.01	0.01	0.01	0.00	0.02	0.00
AU	SM. MILLET	32	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.02	0.01	0.06	0.03

LISTING OF DECILES BY COMMODITY

COMMODITY		ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU11													
AU	GRAM	14	0.54	0.40	0.38	0.34	0.28	0.27	0.27	0.32	0.28	0.18	0.31
AU	GRAM	15	0.44	0.42	0.34	0.28	0.20	0.25	0.33	0.31	0.23	0.30	0.32
AU	GRAM	16	0.24	0.31	0.32	0.21	0.23	0.23	0.20	0.20	0.22	0.28	0.23
AU	GRAM	17	0.29	0.30	0.33	0.37	0.27	0.19	0.24	0.31	0.28	0.10	0.26
AU	GRAM	19	0.11	0.15	0.16	0.13	0.11	0.12	0.12	0.15	0.14	0.13	0.12
AU	GRAM	20	0.19	0.17	0.15	0.18	0.15	0.14	0.17	0.16	0.17	0.20	0.17
AU	GRAM	21	0.13	0.17	0.15	0.13	0.15	0.14	0.17	0.20	0.13	0.24	0.16
AU	GRAM	22	0.06	0.08	0.08	0.09	0.11	0.12	0.11	0.10	0.08	0.16	0.10
AU	GRAM	23	0.10	0.15	0.16	0.17	0.17	0.20	0.18	0.15	0.14	0.27	0.17
AU	GRAM	24	0.09	0.10	0.08	0.09	0.10	0.10	0.10	0.06	0.08	0.16	0.09
AU	GRAM	25	0.10	0.12	0.13	0.12	0.14	0.12	0.13	0.15	0.12	0.23	0.13
AU	GRAM	27	0.05	0.07	0.09	0.10	0.13	0.15	0.16	0.19	0.22	0.22	0.16
AU	GRAM	28	0.04	0.03	0.03	0.04	0.05	0.05	0.06	0.07	0.09	0.11	0.06
AU	GRAM	32	0.05	0.06	0.07	0.09	0.11	0.12	0.14	0.15	0.17	0.22	0.13
AU	GRAM	38	0.03	0.04	0.06	0.06	0.07	0.09	0.10	0.12	0.15	0.21	0.10

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU13													
AU	CEREAL SUB	14	0.15	0.13	0.11	0.10	0.06	0.11	0.12	0.06	0.04	0.24	0.12
AU	CEREAL SUB	15	0.06	0.07	0.14	0.12	0.09	0.10	0.06	0.13	0.15	0.09	0.10
AU	CEREAL SUB	16	0.11	0.12	0.10	0.08	0.08	0.08	0.11	0.09	0.04	0.03	0.08
AU	CEREAL SUB	17	0.09	0.06	0.06	0.11	0.09	0.05	0.06	0.04	0.03	0.04	0.06
AU	CEREAL SUB	18	0.06	0.08	0.05	0.04	0.06	0.04	0.04	0.07	0.08	0.09	0.07
AU	CEREAL SUB	19	0.08	0.10	0.06	0.03	0.04	0.05	0.05	0.04	0.05	0.04	0.06
AU	CEREAL SUB	20	0.11	0.13	0.11	0.09	0.08	0.06	0.07	0.06	0.06	0.06	0.09
AU	CEREAL SUB	21	0.11	0.08	0.08	0.06	0.07	0.06	0.05	0.04	0.03	0.05	0.07
AU	CEREAL SUB	22	0.13	0.11	0.08	0.07	0.06	0.07	0.05	0.04	0.03	0.05	0.07
AU	CEREAL SUB	23	0.09	0.07	0.08	0.06	0.04	0.05	0.04	0.03	0.03	0.06	0.05
AU	CEREAL SUB	24	0.10	0.09	0.06	0.06	0.07	0.07	0.06	0.04	0.05	0.10	0.07
AU	CEREAL SUB	25	0.09	0.09	0.07	0.06	0.07	0.07	0.06	0.07	0.06	0.11	0.07
AU	CEREAL SUB	27	0.08	0.08	0.07	0.08	0.07	0.06	0.07	0.07	0.07	0.06	0.07
AU	CEREAL SUB	28	0.10	0.08	0.07	0.08	0.07	0.07	0.07	0.08	0.08	0.10	0.09
AU	CEREAL SUB	32	0.08	0.07	0.06	0.06	0.06	0.06	0.06	0.06	0.07	0.07	0.07
AU	CEREAL SUB	38	0.02	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.10	0.05

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU14													
AU	PULSE & PR	14	0.98	1.39	1.70	1.96	1.97	2.06	2.29	2.46	2.75	3.41	1.98
AU	PULSE & PR	15	1.17	1.54	1.69	1.99	2.16	2.31	2.58	2.73	3.07	3.99	2.18
AU	PULSE & PR	16	1.24	1.55	1.72	1.91	1.99	2.19	2.43	2.47	2.69	3.33	2.10
AU	PULSE & PR	18	1.19	1.45	1.71	1.88	1.90	1.89	2.07	2.31	2.39	3.01	1.94
AU	PULSE & PR	19	0.92	1.22	1.37	1.55	1.68	1.88	2.09	2.26	2.34	3.01	1.74
AU	PULSE & PR	20	0.81	1.10	1.33	1.51	1.53	1.62	1.91	2.11	2.23	2.63	1.60
AU	PULSE & PR	21	0.72	0.94	1.13	1.27	1.41	1.57	1.74	1.79	1.50	2.83	1.49
AU	PULSE & PR	22	0.62	0.82	0.93	1.05	1.14	1.31	1.42	1.52	1.33	2.55	1.29
AU	PULSE & PR	23	0.98	1.25	1.38	1.55	1.70	1.95	2.06	2.15	1.77	3.28	1.60
AU	PULSE & PR	24	0.78	1.05	1.22	1.35	1.57	1.70	1.80	1.50	1.93	3.86	1.60
AU	PULSE & PR	25	0.88	1.13	1.31	1.47	1.70	1.77	1.85	2.11	1.90	3.61	1.72
AU	PULSE & PR	27	0.69	0.94	1.15	1.32	1.46	1.58	1.74	1.90	2.05	1.99	1.64
AU	PULSE & PR	28	0.64	0.83	0.98	1.08	1.21	1.30	1.43	1.72	1.87	1.76	1.40
AU	PULSE & PR	32	0.77	1.10	1.26	1.43	1.58	1.67	1.76	1.92	2.13	2.25	1.67
AU	PULSE & PR	38	0.79	1.01	1.17	1.22	1.34	1.43	1.63	1.81	2.07	2.64	1.60

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU15													
AU	MILK & PR	8	0.90	1.67	3.18	3.92	5.19	6.34	7.43	10.16	14.01	22.15	7.26
AU	MILK & PR	9	1.24	2.31	3.63	5.14	6.10	6.67	8.05	11.35	14.21	22.93	7.63
AU	MILK & PR	10	1.46	2.12	2.85	4.46	5.52	6.51	7.78	9.66	16.41	26.62	8.07
AU	MILK & PR	11	0.82	1.47	2.37	3.21	4.19	5.30	6.36	7.89	11.06	18.62	6.05
AU	MILK & PR	13	1.06	1.87	2.90	3.43	4.47	5.71	6.91	8.28	11.39	18.26	6.05
AU	MILK & PR	14	1.45	2.25	2.65	3.69	4.44	4.87	6.46	8.64	12.03	20.22	6.35
AU	MILK & PR	15	1.28	1.98	2.58	3.30	4.32	5.70	6.61	8.09	11.22	19.49	6.09
AU	MILK & PR	16	1.31	1.95	2.59	3.33	4.10	5.01	6.09	8.06	11.10	17.43	6.33
AU	MILK & PR	17	1.00	2.11	2.95	3.69	4.55	5.22	6.20	7.59	9.81	11.35	6.65
AU	MILK & PR	18	1.68	2.20	3.14	3.36	3.84	5.38	6.72	8.37	11.06	20.67	6.44
AU	MILK & PR	20	1.18	1.69	2.17	2.92	3.73	4.84	5.72	7.09	9.23	15.86	5.23
AU	MILK & PR	21	0.90	1.70	2.24	2.94	3.27	4.51	5.84	7.39	9.13	17.25	5.46
AU	MILK & PR	22	0.90	1.30	1.88	2.46	3.32	3.81	5.15	6.62	8.30	15.94	5.19
AU	MILK & PR	23	0.90	1.45	1.83	2.44	3.42	3.92	5.13	6.86	8.58	15.93	5.35
AU	MILK & PR	24	0.98	1.58	2.21	3.00	3.48	4.58	6.01	7.05	9.05	18.12	5.16
AU	MILK & PR	25	0.95	1.46	1.95	2.82	3.25	4.24	5.52	6.30	8.52	16.23	5.26
AU	MILK & PR	27	1.00	1.52	2.25	2.59	3.46	4.57	5.04	6.63	9.20	14.44	5.71
AU	MILK & PR	28	0.95	1.58	2.27	2.52	3.51	3.78	4.92	5.94	7.99	13.20	5.12
AU	MILK & PR	32	1.00	1.74	2.47	3.35	4.24	5.37	6.84	7.46	9.75	14.64	6.13
AU	MILK & PR	38	1.53	2.23	3.21	3.34	4.23	5.38	6.14	7.67	10.01	16.02	6.34

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU16													
AU	EDIBLE OIL	8	0.71	0.96	1.17	1.25	1.67	1.93	2.10	2.44	2.48	3.50	1.71
AU	EDIBLE OIL	9	0.74	1.07	1.35	1.42	1.69	1.81	2.02	2.29	2.62	3.50	1.73
AU	EDIBLE OIL	10	0.82	1.11	1.36	1.68	1.77	1.99	2.49	2.63	3.16	4.67	2.03
AU	EDIBLE OIL	11	0.79	1.12	1.44	1.65	1.98	2.31	2.75	2.97	3.42	4.68	2.25
AU	EDIBLE OIL	13	0.79	1.10	1.36	1.62	1.86	2.21	2.44	2.79	3.46	4.55	2.10
AU	EDIBLE OIL	14	0.88	1.43	1.76	1.99	2.20	2.42	2.66	2.97	3.55	4.87	2.34
AU	EDIBLE OIL	15	0.88	1.27	1.40	1.71	2.05	2.25	2.55	2.95	3.60	4.98	2.18
AU	EDIBLE OIL	16	1.10	1.45	1.65	1.95	2.13	2.27	2.64	3.05	3.43	4.54	2.39
AU	EDIBLE OIL	17	0.90	1.38	1.75	1.93	2.10	2.41	2.65	2.92	3.33	2.39	2.47
AU	EDIBLE OIL	20	1.06	1.51	1.81	2.05	2.23	2.51	2.97	3.52	4.01	5.39	2.58
AU	EDIBLE OIL	21	1.01	1.51	1.77	2.03	2.26	2.71	3.11	3.45	3.28	6.20	2.74
AU	EDIBLE OIL	22	0.82	1.15	1.38	1.56	1.77	2.04	2.39	2.71	2.60	5.00	2.20
AU	EDIBLE OIL	23	0.95	1.30	1.47	1.69	1.97	2.26	2.61	2.88	2.70	5.01	2.33
AU	EDIBLE OIL	24	1.01	1.40	1.66	1.99	2.30	2.66	3.00	2.62	3.37	6.74	2.52
AU	EDIBLE OIL	25	0.97	1.31	1.56	1.92	2.22	2.45	2.73	3.12	3.23	6.16	2.53
AU	EDIBLE OIL	27	1.15	1.58	1.97	2.26	2.64	3.00	3.31	3.78	4.35	5.00	3.24
AU	EDIBLE OIL	28	0.95	1.35	1.67	1.85	2.15	2.31	2.68	3.23	3.73	4.36	2.64
AU	EDIBLE OIL	32	0.99	1.43	1.72	2.03	2.32	2.60	2.89	3.15	3.67	4.29	2.66
AU	EDIBLE OIL	38	1.16	1.55	1.93	2.01	2.29	2.55	2.91	3.32	3.93	5.40	2.86

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU17													
AU	MEAT,EGG,F	8	0.72	1.21	1.64	1.68	2.54	3.11	3.27	3.82	5.09	7.94	2.94
AU	MEAT,EGG,F	9	0.81	1.33	1.70	1.45	1.87	2.40	2.79	3.08	4.64	7.75	2.55
AU	MEAT,EGG,F	10	0.70	1.19	1.79	2.11	2.30	2.51	3.08	3.52	4.34	7.37	2.81
AU	MEAT,EGG,F	11	0.69	1.02	1.41	1.64	1.99	2.22	2.89	3.58	4.23	7.21	2.63
AU	MEAT,EGG,F	13	0.81	1.07	1.45	1.72	2.19	3.33	3.65	4.13	5.72	7.49	2.96
AU	MEAT,EGG,F	14	0.77	1.31	1.58	1.75	2.22	3.13	3.17	3.26	4.37	6.27	2.63
AU	MEAT,EGG,F	15	0.80	1.28	1.36	1.78	2.13	2.19	2.67	3.50	4.29	6.39	2.46
AU	MEAT,EGG,F	16	0.72	0.89	1.30	1.74	2.17	2.40	2.51	2.92	3.47	5.84	2.50
AU	MEAT,EGG,F	17	0.62	0.94	1.29	1.71	1.99	2.19	2.46	2.73	3.33	3.40	2.46
AU	MEAT,EGG,F	20	0.49	0.69	0.92	1.11	1.25	1.43	1.69	2.05	2.59	4.40	1.61
AU	MEAT,EGG,F	21	0.46	0.70	0.86	0.97	1.08	1.31	1.74	2.04	2.17	4.10	1.55
AU	MEAT,EGG,F	22	0.48	0.67	0.82	0.97	1.13	1.30	1.59	1.86	2.08	3.99	1.54
AU	MEAT,EGG,F	23	0.54	0.73	0.92	1.14	1.31	1.51	1.74	2.17	2.33	4.34	1.73
AU	MEAT,EGG,F	24	0.61	0.84	1.08	1.36	1.57	1.87	2.23	2.28	2.93	5.87	1.94
AU	MEAT,EGG,F	25	0.59	0.89	1.08	1.31	1.52	1.75	2.04	2.33	2.84	5.42	2.00
AU	MEAT,EGG,F	27	0.57	0.79	0.99	1.14	1.31	1.54	1.70	2.05	2.64	4.25	1.87
AU	MEAT,EGG,F	28	0.62	0.79	0.96	1.07	1.29	1.39	1.67	2.01	2.50	4.30	1.80
AU	MEAT,EGG,F	32	0.55	0.84	1.02	1.21	1.42	1.61	1.85	2.01	2.48	3.81	1.78
AU	MEAT,EGG,F	38	0.57	0.80	1.01	1.05	1.23	1.46	1.66	1.98	2.47	3.92	1.72

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU18													
AU	VEG,FR,NUT	19	1.05	1.43	1.70	1.99	2.29	2.56	3.06	3.72	4.61	8.32	2.97
AU	VEG,FR,NUT	20	1.04	1.55	1.83	2.10	2.39	2.75	3.25	4.04	5.09	8.83	3.20
AU	VEG,FR,NUT	21	1.03	1.37	1.64	1.90	2.11	2.56	3.13	3.74	4.45	8.40	3.03
AU	VEG,FR,NUT	22	0.93	1.31	1.55	1.73	2.03	2.33	2.83	3.45	4.15	7.96	2.93
AU	VEG,FR,NUT	23	0.99	1.40	1.57	1.75	2.05	2.36	2.84	3.47	4.24	7.88	2.98
AU	VEG,FR,NUT	24	1.19	1.65	1.94	2.27	2.63	3.13	3.80	4.33	5.56	11.13	3.52
AU	VEG,FR,NUT	25	1.16	1.56	1.85	2.21	2.55	2.99	3.54	4.04	5.06	9.64	3.52
AU	VEG,FR,NUT	27	1.34	1.73	2.06	2.37	2.74	3.24	3.57	4.37	5.73	9.21	4.01
AU	VEG,FR,NUT	28	1.10	1.49	1.83	2.03	2.38	2.57	3.10	3.74	4.80	7.70	3.33
AU	VEG,FR,NUT	32	1.27	1.79	2.10	2.43	2.79	3.16	3.72	4.05	5.08	8.03	3.63
AU	VEG,FR,NUT	38	1.49	1.99	2.42	2.52	2.90	3.35	3.83	4.54	5.74	9.23	4.06

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU21													
AU	SUGAR	8	0.38	0.61	0.92	1.12	1.38	1.51	1.65	2.20	2.35	3.46	1.49
AU	SUGAR	9	0.52	0.77	1.06	1.33	1.56	1.62	1.83	2.21	2.66	3.48	1.60
AU	SUGAR	10	0.50	0.77	0.91	1.25	1.48	1.74	2.10	2.31	2.71	3.97	1.70
AU	SUGAR	11	0.44	0.65	0.94	1.25	1.51	1.67	1.93	2.21	2.70	3.61	1.65
AU	SUGAR	13	0.52	0.79	1.11	1.31	1.60	1.97	2.14	2.39	2.98	4.04	1.79
AU	SUGAR	14	0.67	1.05	1.31	1.62	1.79	1.95	2.42	2.73	3.15	4.27	1.97
AU	SUGAR	15	0.73	1.16	1.30	1.58	1.92	2.20	2.42	2.63	3.17	4.78	2.03
AU	SUGAR	16	0.78	1.08	1.26	1.53	1.76	1.87	2.14	2.54	3.04	3.94	4.34
AU	SUGAR	17	0.66	1.06	1.30	1.55	1.74	1.86	2.07	2.34	2.73	2.11	1.98
AU	SUGAR	19	0.86	1.15	1.36	1.54	1.65	1.85	2.05	2.26	2.50	3.36	1.78
AU	SUGAR	20	0.81	1.06	1.27	1.45	1.49	1.58	1.87	2.04	2.21	2.76	1.57
AU	SUGAR	21	0.73	1.03	1.18	1.28	1.43	1.65	1.82	1.88	1.74	3.28	1.60
AU	SUGAR	22	0.73	1.01	1.18	1.25	1.41	1.62	1.83	2.02	2.05	3.93	1.73
AU	SUGAR	23	0.83	1.06	1.22	1.42	1.70	1.95	2.31	2.53	2.46	4.57	2.06
AU	SUGAR	24	0.42	0.92	1.07	1.25	1.45	1.64	1.79	1.51	1.94	3.89	1.53
AU	SUGAR	25	0.61	0.85	1.03	1.28	1.48	1.69	1.82	2.08	1.99	3.80	1.63
AU	SUGAR	27	0.51	0.67	0.80	0.91	1.04	1.16	1.28	1.45	1.67	1.95	1.27
AU	SUGAR	28	0.50	0.69	0.82	0.91	1.06	1.14	1.31	1.58	1.76	1.98	1.27
AU	SUGAR	32	0.61	0.83	0.97	1.12	1.25	1.40	1.54	1.68	1.94	2.28	1.44
AU	SUGAR	38	0.69	0.90	1.07	1.12	1.23	1.31	1.50	1.67	1.92	2.61	1.49

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU22													
AU	SALT,SPICE	8	0.07	0.07	0.09	0.09	0.09	0.09	0.10	0.11	0.11	0.13	0.09
AU	SALT,SPICE	9	0.08	0.10	0.11	0.10	0.11	0.12	0.12	0.12	0.12	0.14	0.11
AU	SALT,SPICE	10	0.09	0.10	0.10	0.10	0.12	0.12	0.12	0.13	0.11	0.16	0.11
AU	SALT,SPICE	11	0.06	0.08	0.10	0.09	0.10	0.09	0.10	0.11	0.11	0.13	0.09
AU	SALT,SPICE	13	0.07	0.08	0.08	0.09	0.09	0.10	0.11	0.10	0.11	0.13	0.09
AU	SALT,SPICE	14	0.06	0.09	0.10	0.10	0.09	0.10	0.10	0.10	0.12	0.16	0.09
AU	SALT,SPICE	15	0.08	0.10	0.09	0.09	0.08	0.08	0.08	0.08	0.09	0.12	0.08
AU	SALT,SPICE	16	0.06	0.07	0.08	0.09	0.09	0.09	0.10	0.10	0.10	0.13	0.10
AU	SALT,SPICE	17	0.07	0.09	0.09	0.09	0.10	0.10	0.10	0.10	0.10	0.07	0.10
AU	SALT,SPICE	19	0.05	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.11	0.08
AU	SALT,SPICE	20	0.79	1.05	1.12	1.20	1.28	1.29	1.52	1.59	1.72	2.15	1.31
AU	SALT,SPICE	21	0.99	1.16	1.30	1.35	1.50	1.54	1.58	1.56	1.31	2.48	1.48
AU	SALT,SPICE	22	0.73	0.90	0.97	1.04	1.01	1.16	1.19	1.22	1.04	1.99	1.14
AU	SALT,SPICE	23	0.90	1.10	1.15	1.21	1.25	1.43	1.49	1.48	1.30	2.41	1.38
AU	SALT,SPICE	24	0.89	1.15	1.29	1.38	1.59	1.62	1.61	1.36	1.75	3.50	1.54
AU	SALT,SPICE	25	0.95	1.18	1.29	1.37	1.58	1.60	1.61	1.83	1.59	3.04	1.56
AU	SALT,SPICE	27	0.87	1.06	1.15	1.32	1.32	1.31	1.44	1.50	1.56	1.59	1.43
AU	SALT,SPICE	28	0.80	0.98	1.07	1.18	1.16	1.25	1.25	1.51	1.57	1.61	1.33
AU	SALT,SPICE	32	0.86	1.10	1.21	1.28	1.35	1.39	1.43	1.56	1.72	1.94	1.45
AU	SALT,SPICE	38	0.66	0.83	0.92	0.96	1.02	1.05	1.20	1.30	1.48	1.92	1.21

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU25													
AU	BEV,REF.	20	0.86	1.34	1.61	1.80	2.22	2.74	3.24	4.87	8.91	20.48	4.81
AU	BEV,REF.	21	0.87	1.30	1.58	1.85	2.06	2.54	3.63	5.70	11.14	21.04	5.07
AU	BEV,REF.	22	0.81	1.19	1.39	1.62	1.95	2.24	3.02	4.85	8.96	17.20	4.57
AU	BEV,REF.	23	0.74	1.01	1.32	1.65	2.04	2.35	2.86	4.00	8.26	15.35	4.32
AU	BEV,REF.	24	0.91	1.26	1.54	1.91	2.22	2.83	4.02	9.08	11.66	23.36	5.28
AU	BEV,REF.	25	1.00	1.41	1.63	1.94	2.25	2.66	3.62	4.13	8.48	16.16	4.67
AU	BEV,REF.	27	0.86	1.13	1.37	1.57	1.93	2.58	2.84	4.29	7.64	15.05	4.35
AU	BEV,REF.	28	0.88	1.10	1.35	1.50	1.84	1.99	2.67	3.22	5.80	15.14	3.83
AU	BEV,REF.	32	0.88	1.49	1.65	1.77	2.08	2.40	3.19	3.48	5.12	10.93	3.45
AU	BEV,REF.	38	0.98	1.36	1.69	1.77	2.11	2.72	3.10	4.03	5.72	11.73	3.84

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU26													
AU	OTHER FOOD	8	3.50	4.65	5.79	6.40	8.32	9.21	9.82	11.90	14.85	24.04	9.47
AU	OTHER FOOD	9	3.68	4.88	6.55	7.29	8.56	10.02	11.76	13.15	16.61	25.64	10.15
AU	OTHER FOOD	10	4.09	5.90	6.98	7.71	8.99	9.84	11.39	13.73	16.15	27.44	10.85
AU	OTHER FOOD	11	3.19	4.49	5.79	6.22	7.34	8.19	9.64	11.94	15.72	27.82	9.80
AU	OTHER FOOD	13	3.58	4.82	5.59	6.63	7.53	8.94	10.02	12.02	16.58	28.03	9.87
AU	OTHER FOOD	14	3.59	5.00	6.44	7.50	7.93	9.16	10.34	12.60	16.22	28.72	10.41
AU	OTHER FOOD	15	3.70	5.22	6.31	7.75	8.52	9.31	10.61	12.64	15.69	28.23	10.30
AU	OTHER FOOD	16	3.90	5.29	6.64	7.42	8.15	9.45	10.63	12.89	16.81	28.79	11.35
AU	OTHER FOOD	17	3.68	5.25	6.38	7.23	8.03	9.01	9.96	11.56	14.43	19.86	11.26
AU	OTHER FOOD	18	5.36	7.35	9.11	10.34	12.05	13.45	15.81	20.36	26.14	43.17	15.85

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU27													
AU	TOTAL FOOD	8	17.33	22.09	26.82	29.10	35.11	38.21	40.55	46.74	54.24	79.27	37.16
AU	TOTAL FOOD	9	18.76	24.50	29.92	32.23	36.88	41.25	45.56	48.90	59.19	85.85	39.79
AU	TOTAL FOOD	10	20.76	26.77	30.92	34.44	38.62	42.11	47.15	53.45	61.64	93.21	42.73
AU	TOTAL FOOD	11	17.08	22.60	27.48	29.73	34.07	36.76	41.27	46.96	53.63	80.07	37.80
AU	TOTAL FOOD	13	17.83	23.96	26.25	31.13	34.10	37.40	41.10	45.47	56.80	79.71	37.24
AU	TOTAL FOOD	14	18.20	24.81	28.21	31.48	33.62	37.19	40.28	45.13	55.12	81.37	37.62
AU	TOTAL FOOD	15	18.13	24.37	27.02	31.16	33.94	36.68	39.90	45.30	55.24	84.28	37.24
AU	TOTAL FOOD	16	18.99	24.56	28.40	31.36	34.31	37.56	40.22	45.17	53.99	78.20	39.23
AU	TOTAL FOOD	17	18.22	25.14	28.89	32.24	35.00	37.25	39.81	43.60	49.78	49.63	40 22
AU	TOTAL FOOD	18	18.94	23.66	27.79	30.34	32.62	34.70	38.80	45.50	53.83	81.80	37.93
AU	TOTAL FOOD	19	13.26	16.93	18.40	19.75	20.08	22.48	23.70	24.89	25.72	33.37	21.00
AU	TOTAL FOOD	20	16.83	22.25	25.08	27.89	29.71	31.63	37.42	41.94	49.50	75.67	34.50
AU	TOTAL FOOD	21	16.06	21.08	24.27	26.29	29.21	32.42	36.13	39.54	42.35	80.01	34.71
AU	TOTAL FOOD	22	14.30	19.02	21.36	23.51	25.56	29.34	32.58	36.00	37.86	72.71	32.02
AU	TOTAL FOOD	23	15.72	20.83	23.00	25.59	28.21	32.40	35.49	39.15	41.49	77.08	34.71
AU	TOTAL FOOD	24	16.35	21.43	24.38	27.15	31.44	34.22	37.45	37.92	48.70	97.51	35.62
AU	TOTAL FOOD	25	16.32	21.14	23.84	26.69	30.85	33.04	35.97	41.05	44.88	85.53	35.74
AU	TOTAL FOOD	27	17.24	21.84	25.19	28.93	31.12	33.34	36.78	41.27	49.54	65.14	38.53
AU	TOTAL FOOD	28	16.91	21.49	24.51	27.18	29.53	31.80	34.83	42.04	47.94	65.51	36.84
AU	TOTAL FOOD	32	16.32	21.84	24.78	27.51	30.11	32.35	35.38	38.59	45.36	55.93	34.88
AU	TOTAL FOOD	38	16.41	21.07	24.37	25.41	27.92	30.52	34.82	39.51	47.13	69.83	35.95

LISTING OF DECILES BY COMMODITY

COMMODITY		ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU30													
AU	TOTAL EXP.	8	23.27	31.05	39.58	43.46	52.52	59.93	69.46	81.64	107.12	196.21	67.96
AU	TOTAL EXP.	9	24.97	33.41	41.82	47.37	55.59	63.73	73.92	87.68	112.66	192.46	68.90
AU	TOTAL EXP.	10	27.29	36.08	43.42	49.50	57.29	65.71	75.32	88.35	112.35	201.92	73.41
AU	TOTAL EXP.	11	21.66	29.21	36.54	40.86	48.23	54.19	62.59	72.16	94.63	196.35	64.64
AU	TOTAL EXP.	13	23.28	31.67	37.16	44.08	49.94	57.90	65.56	76.56	101.26	171.08	62.57
AU	TOTAL EXP.	14	24.08	33.82	39.77	45.53	50.43	57.63	65.10	77.64	99.55	184.39	65.58
AU	TOTAL EXP.	15	23.86	32.79	37.46	44.16	49.59	55.63	63.21	74.98	96.59	178.58	62.66
AU	TOTAL EXP.	16	24.13	31.88	37.59	42.53	47.37	53.16	58.54	69.45	88.61	150.60	62.07
AU	TOTAL EXP.	17	22.95	32.27	38.08	43.29	48.33	53.29	59.21	67.47	81.31	114.45	65.10
AU	TOTAL EXP.	18	24.80	31.74	38.01	43.05	48.59	53.90	62.02	75.81	97.27	183.20	64.60
AU	TOTAL EXP.	19	23.19	30.98	35.80	41.10	45.27	50.68	59.49	72.32	89.56	171.96	60.70
AU	TOTAL EXP.	20	21.67	29.23	33.65	37.95	41.76	46.41	54.90	64.85	81.66	149.34	54.79
AU	TOTAL EXP.	21	20.49	27.25	31.77	35.42	39.37	45.29	52.64	61.44	76.55	144.62	53.26
AU	TOTAL EXP.	22	19.18	25.70	29.32	32.65	36.62	42.04	48.93	57.46	71.26	136.84	51.75
AU	TOTAL EXP.	23	20.34	27.05	30.56	34.55	39.22	45.05	51.34	60.37	74.52	138.44	54.23
AU	TOTAL EXP.	24	21.14	27.84	32.29	37.34	43.24	49.05	56.68	66.31	85.15	170.50	65.28
AU	TOTAL EXP.	25	20.84	27.31	31.31	36.10	41.73	46.50	53.27	60.79	78.41	149.43	55.49
AU	TOTAL EXP.	27	21.87	28.02	32.87	37.74	41.95	47.36	52.23	62.27	81.61	148.88	60.13
AU	TOTAL EXP.	28	20.57	26.47	30.89	34.25	38.42	41.37	47.18	56.95	70.37	122.18	52.42
AU	TOTAL EXP.	32	20.52	27.81	32.11	36.46	40.91	45.55	52.74	57.51	71.74	134.52	54.34
AU	TOTAL EXP.	38	21.31	27.81	33.01	34.41	38.73	44.48	50.74	60.39	76.34	132.18	55.91

LISTING OF DECILES BY COMMODITY

	COMMODITY	ROUND	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	AVERAGE
** STATE: AU31													
AU	NON FOOD	8	5.94	8.96	12.76	14.36	17.41	21.71	28.91	34.89	52.88	116.95	30.80
AU	NON FOOD	9	6.21	8.91	11.89	15.14	18.71	22.48	28.36	38.79	53.47	106.61	29.11
AU	NON FOOD	10	6.53	9.31	12.50	15.06	18.67	23.60	28.17	34.90	50.71	108.71	30.69
AU	NON FOOD	11	4.57	6.62	9.06	11.13	14.16	17.43	21.32	25.20	40.99	116.27	26.84
AU	NON FOOD	13	5.45	7.71	10.91	12.94	15.84	20.50	24.46	31.09	44.46	91.37	25.32
AU	NON FOOD	14	5.88	9.01	11.56	14.05	16.82	20.44	24.82	32.51	44.43	103.02	27.96
AU	NON FOOD	15	5.73	8.42	10.44	13.01	15.65	18.95	23.31	29.68	41.35	94.30	25.42
AU	NON FOOD	16	5.14	7.32	9.19	11.17	13.06	15.59	18.32	24.29	34.62	72.40	22.84
AU	NON FOOD	17	4.73	7.13	9.19	11.06	13.33	16.04	19.40	23.87	31.54	64.82	24.88
AU	NON FOOD	18	5.86	8.08	10.23	12.71	15.97	19.21	23.22	30.30	43.44	101.40	26.67
AU	NON FOOD	19	9.94	14.04	17.40	21.35	25.19	28.20	35.80	47.43	63.84	138.59	39.70
AU	NON FOOD	20	4.83	6.97	8.57	10.06	12.05	14.78	17.48	22.92	32.16	73.67	20.29
AU	NON FOOD	21	4.42	6.17	7.50	9.14	10.15	12.87	16.51	21.90	34.20	64.62	18.55
AU	NON FOOD	22	4.88	6.68	7.95	9.15	11.06	12.70	16.35	21.46	33.39	64.13	19.74
AU	NON FOOD	23	4.62	6.22	7.55	8.96	11.02	12.65	15.85	21.22	33.03	61.36	19.52
AU	NON FOOD	24	4.79	6.41	7.91	10.19	11.80	14.83	19.23	28.39	36.45	72.99	29.65
AU	NON FOOD	25	4.52	6.17	7.47	9.41	10.87	13.46	17.29	19.73	33.53	63.90	19.75
AU	NON FOOD	27	4.64	6.18	7.68	8.81	10.83	14.02	15.46	21.00	32.07	83.74	21.61
AU	NON FOOD	28	3.66	4.98	6.38	7.07	8.89	9.57	12.34	14.90	22.44	56.67	15.58
AU	NON FOOD	32	4.20	5.97	7.33	8.95	10.80	13.19	17.36	18.93	26.38	74.59	19.46
AU	NON FOOD	38	4.90	6.73	8.64	9.00	10.81	13.95	15.92	20.88	29.22	62.35	19.95

PER CAPITA ENERGY INTAKE (CALORIE PER DAY) BY DECILES

AU	8	1135	1369	1555	1650	1862	1940	2007	2145	2232	2906
AU	9	1163	1441	1641	1690	1881	2058	2156	2069	2354	3086
AU	10	1298	1574	1742	1837	2002	2140	2292	2482	2473	3297
AU	11	1033	1315	1527	1608	1789	1857	1999	2148	2161	2729
AU	13	1038	1370	1409	1670	1749	1761	1886	1971	2249	2686
AU	14	1184	1547	1687	1819	1888	2008	2096	2208	2511	3147
AU	15	1205	1550	1648	1823	1911	2002	2104	2258	2625	3471
AU	16	1244	1571	1727	1826	1945	2062	2120	2193	2406	2942
AU	17	1162	1523	1666	1802	1888	1926	1984	2065	2156	1422
AU	18	1089	1299	1454	1512	1538	1557	1637	1735	1812	2331
AU	19	1011	1285	1385	1474	1480	1657	1721	1773	1779	2149
AU	20	1079	1386	1526	1659	1696	1713	2026	2105	2179	2673
AU	21	1006	1283	1452	1526	1697	1803	1891	1879	1588	3000
AU	22	868	1141	1253	1352	1424	1634	1719	1738	1497	2876
AU	23	1026	1334	1435	1555	1647	1891	1974	2009	1703	3163
AU	24	1026	1336	1472	1576	1825	1885	1905	1468	1885	3774
AU	25	1048	1322	1453	1559	1802	1836	1858	2120	1845	3517
AU	27	1050	1309	1468	1686	1737	1744	1924	1987	2085	2091
AU	28	1062	1319	1453	1611	1668	1795	1849	2231	2250	2257
AU	32	1060	1379	1516	1622	1711	1760	1793	1955	2124	2228
AU	38	1023	1276	1409	1469	1551	1591	1816	1948	2161	2779

PER CAPITA ENERGY INTAKE (% PULSE PROTEIN TO CEREAL PROTEIN PER DAY) BY DECILES

AU	8	0	0	0	0	0	0	0	0	0	0
AU	9	0	0	0	0	0	0	0	0	0	0
AU	10	0	0	0	0	0	0	0	0	0	0
AU	11	0	0	0	0	0	0	0	0	0	0
AU	13	0	0	0	0	0	0	0	0	0	0
AU	14	17	18	21	24	23	23	26	28	28	31
AU	15	20	21	22	24	26	28	31	31	31	33
AU	16	21	21	22	23	23	25	28	29	30	34
AU	17	0	0	0	0	0	0	0	0	0	0
AU	18	20	21	22	24	24	24	26	28	29	32
AU	19	17	18	19	20	22	22	25	27	28	32
AU	20	16	17	19	20	21	23	23	26	29	32
AU	21	15	16	17	19	19	21	23	26	30	30
AU	22	14	15	16	17	18	18	20	22	27	27
AU	23	20	20	21	22	24	24	26	29	32	32
AU	24	15	17	18	19	19	21	24	30	31	31
AU	25	17	18	19	21	21	23	25	25	30	30
AU	27	14	15	17	17	20	23	23	26	30	38
AU	28	13	14	16	16	18	18	20	20	24	27
AU	32	14	16	17	19	20	22	25	25	27	34
AU	38	15	16	18	18	20	22	22	24	26	29

PER CAPITA ENERGY INTAKE (PROTEIN PER DAY) BY DECILES

AU	8	35	42	48	50	57	59	61	65	70	91
AU	9	36	44	50	51	57	63	66	63	72	97
AU	10	40	48	53	56	61	65	69	75	75	101
AU	11	31	40	46	48	53	55	59	63	63	82
AU	13	32	41	42	50	52	52	56	58	67	80
AU	14	36	46	50	53	55	59	61	64	74	93
AU	15	36	46	49	54	56	58	61	66	77	102
AU	16	37	46	51	54	57	61	62	64	70	87
AU	17	35	45	49	53	56	56	58	60	62	42
AU	18	35	42	47	49	50	51	54	57	60	79
AU	19	31	39	42	44	44	49	51	52	52	63
AU	20	32	41	44	48	49	50	59	61	63	79
AU	21	30	37	42	44	49	52	54	54	46	87
AU	22	25	33	36	39	41	48	50	50	43	83
AU	23	30	39	42	45	48	55	57	58	49	91
AU	24	31	40	44	46	54	55	56	43	56	112
AU	25	31	39	43	46	53	54	54	62	54	104
AU	27	31	39	43	50	51	51	56	58	61	63
AU	28	32	40	43	48	50	53	55	66	66	68
AU	32	32	41	45	48	51	52	53	58	63	67
AU	38	30	38	41	43	45	47	53	57	64	83

PER CAPITA ENERGY INTAKE (% CEREAL PROTEIN TO TOTAL PROTEIN) BY DECILES

AU	8	0	0	0	0	0	0	0	0	0	0
AU	9	0	0	0	0	0	0	0	0	0	0
AU	10	0	0	0	0	0	0	0	0	0	0
AU	11	0	0	0	0	0	0	0	0	0	0
AU	13	0	0	0	0	0	0	0	0	0	0
AU	14	82	81	80	78	77	75	72	69	65	58
AU	15	79	78	77	75	73	70	68	66	63	58
AU	16	79	79	77	76	74	73	70	67	63	57
AU	17	84	82	80	79	78	77	75	72	68	55
AU	18	84	83	81	80	79	77	74	71	68	60
AU	19	88	87	86	86	84	84	83	81	79	74
AU	20	81	80	78	76	74	71	71	66	61	51
AU	21	82	80	79	77	77	73	69	63	54	54
AU	22	85	84	82	80	77	77	73	67	57	57
AU	23	79	79	77	76	73	73	70	65	56	56
AU	24	81	80	78	75	75	72	67	56	56	56
AU	25	81	79	78	75	75	72	67	67	57	57
AU	27	80	78	76	76	72	68	68	63	56	41
AU	28	75	74	72	72	68	68	65	65	59	47
AU	32	87	85	82	79	76	72	67	67	62	49
AU	38	84	82	78	78	75	70	70	67	62	55

PER CAPITA ENERGY INTAKE (% CEREAL CALORIES TO TOTAL CALORIES) BY DECILES

AU	8	0	0	0	0	0	0	0	0	0	0
AU	9	0	0	0	0	0	0	0	0	0	0
AU	10	0	0	0	0	0	0	0	0	0	0
AU	11	0	0	0	0	0	0	0	0	0	0
AU	13	0	0	0	0	0	0	0	0	0	0
AU	14	87	86	83	80	79	78	74	70	67	61
AU	15	83	82	80	78	75	72	70	68	65	60
AU	16	83	82	81	78	77	76	72	68	65	59
AU	17	88	86	83	81	80	79	76	74	70	58
AU	18	95	94	92	92	91	88	86	83	80	72
AU	19	94	92	91	90	89	88	87	84	82	77
AU	20	84	83	80	78	76	72	72	67	62	53
AU	21	85	82	81	78	78	74	70	64	55	55
AU	22	87	86	84	82	79	79	74	68	58	58
AU	23	82	81	80	78	74	74	70	66	57	57
AU	24	86	83	81	78	78	74	69	59	59	59
AU	25	85	83	81	77	77	74	69	69	59	59
AU	27	84	82	79	79	75	70	70	64	58	44
AU	28	80	78	75	75	71	71	67	67	61	50
AU	32	92	89	86	82	79	75	70	70	65	52
AU	38	87	85	81	81	77	73	73	69	64	57

PER CAPITA ENERGY INTAKE (% OIL CALORIES TO TOTAL CALORIES) BY DECILES

AU	8	4	4	4	4	5	6	6	6	6	7
AU	9	4	4	5	5	5	5	5	6	6	6
AU	10	4	4	4	5	5	5	6	6	7	8
AU	11	4	5	5	6	6	7	8	8	9	10
AU	13	4	5	5	5	6	7	7	8	9	10
AU	14	4	5	6	6	7	7	7	8	8	9
AU	15	4	5	5	5	6	6	7	7	8	8
AU	16	5	5	5	6	6	6	7	8	8	9
AU	17	4	5	6	6	6	7	8	8	9	9
AU	18	0	0	0	0	0	0	0	0	0	0
AU	19	0	0	0	0	0	0	0	0	0	0
AU	20	6	6	7	7	7	8	8	9	10	11
AU	21	6	7	7	7	7	8	9	10	12	12
AU	22	5	6	6	6	7	7	8	9	10	10
AU	23	5	5	6	6	7	7	7	8	9	9
AU	24	6	6	6	7	7	8	9	10	10	10
AU	25	5	6	6	7	7	8	8	8	10	10
AU	27	6	7	8	8	9	10	10	11	12	13
AU	28	5	6	6	6	7	7	8	8	9	11
AU	32	5	6	6	7	8	8	9	9	10	11
AU	38	6	7	8	8	8	9	9	10	10	11

PER CAPITA ENERGY INTAKE (% SUGAR CALORIES TO TOTAL CALORIES) BY DECILES

AU	8	2	3	4	5	5	5	6	7	7	8
AU	9	3	4	4	5	6	5	6	7	8	8
AU	10	3	3	4	5	5	5	6	6	7	8
AU	11	3	3	4	5	6	6	7	7	8	9
AU	13	3	4	5	5	6	8	8	8	9	10
AU	14	4	5	5	6	6	7	8	8	8	9
AU	15	4	5	5	6	7	7	8	8	8	9
AU	16	4	5	5	6	6	6	7	8	9	9
AU	17	4	5	5	6	6	7	7	8	9	10
AU	18	0	0	0	0	0	0	0	0	0	0
AU	19	6	6	7	7	8	8	8	9	9	11
AU	20	5	5	6	6	6	6	6	7	7	7
AU	21	5	5	5	6	6	6	6	7	7	7
AU	22	6	6	6	6	7	7	7	8	9	9
AU	23	5	5	6	6	7	7	8	8	10	10
AU	24	3	5	5	5	5	6	6	7	7	7
AU	25	4	4	5	6	6	6	7	7	7	7
AU	27	3	3	4	4	4	4	4	5	5	6
AU	28	3	4	4	4	4	4	5	5	5	6
AU	32	4	4	4	5	5	5	6	6	6	7
AU	38	5	5	5	5	5	6	6	6	6	6

PER CAPITA ENERGY INTAKE (CALORIE PER DAY) BY DECILES

AR	2	946	1476	1773	2100	2249	2445	2808	3230	3365	4566
AR	3	1037	1544	1804	2094	2416	2658	2771	3177	3632	4680
AR	4	956	1395	1718	1962	2181	2487	2607	2884	3374	3724
AR	5	929	1328	1627	1858	2048	2236	2376	2672	2751	2881
AR	6	1003	1575	1856	2055	2324	2550	2801	2902	3189	4298
AR	7	1037	1390	1645	1818	2045	2147	2280	2520	2510	3002
AR	8	902	1422	1659	1849	2060	2200	2340	2518	2894	2370
AR	9	946	1511	1750	2001	2239	2426	2543	2679	3084	2636
AR	10	1246	1664	1892	2167	2399	2572	2802	3148	3341	4249
AR	11	1085	1427	1606	1805	2046	2228	2356	2584	2761	2497
AR	13	1004	1423	1647	1860	1992	2137	2358	2652	2769	3105
AR	14	1151	1580	1921	2138	2302	2487	2809	3064	3153	3846
AR	15	1276	1690	1949	2140	2392	2548	2684	2956	3069	3631
AR	16	1327	1726	2002	2142	2451	2663	2890	2848	3328	3828
AR	17	1304	1714	1968	2113	2318	2543	2748	2864	2935	3423
AR	18	1253	1625	1825	1945	2098	2235	2380	2472	2703	2650
AR	19	1190	1542	1772	1977	2130	2255	2360	2710	2635	3003
AR	20	1227	1633	1857	2064	2288	2499	2725	2940	3173	3826
AR	21	1078	1543	1766	1953	2148	2357	2547	2842	3273	3921
AR	22	978	1325	1562	1734	1889	2122	2257	2419	2719	3664
AR	23	1083	1450	1684	1860	1993	2250	2350	2457	2712	3695
AR	24	1112	1510	1683	1864	2020	2096	2294	2468	2754	3694
AR	25	1060	1363	1567	1731	1818	2032	2124	2374	2667	3102
AR	27	1077	1443	1612	1832	1960	2135	2291	2438	2905	2411
AR	28	1197	1569	1760	1934	2099	2357	2471	2912	3010	2737
AR	32	1141	1476	1630	1804	1943	2047	2157	2321	2540	2568
AR	38	1155	1398	1581	1742	1959	2048	2149	2469	2653	2773

PER CAPITA ENERGY INTAKE (% PULSE PROTEIN TO CEREAL PROTEIN PER DAY) BY DECILES

AR	2	0	0	0	0	0	0	0	0	0	0
AR	3	0	0	0	0	0	0	0	0	0	0
AR	4	0	0	0	0	0	0	0	0	0	0
AR	5	0	0	0	0	0	0	0	0	0	0
AR	6	0	0	0	0	0	0	0	0	0	0
AR	7	0	0	0	0	0	0	0	0	0	0
AR	8	0	0	0	0	0	0	0	0	0	0
AR	9	0	0	0	0	0	0	0	0	0	0
AR	10	0	0	0	0	0	0	0	0	0	0
AR	11	0	0	0	0	0	0	0	0	0	0
AR	13	0	0	0	0	0	0	0	0	0	0
AR	14	13	13	15	15	15	16	19	20	20	24
AR	15	14	15	17	17	18	19	20	22	22	23
AR	16	15	15	17	18	18	19	21	23	25	29
AR	17	0	0	0	0	0	0	0	0	0	0
AR	18	16	17	17	18	21	21	21	22	23	29
AR	19	11	14	14	15	16	17	19	19	22	27
AR	20	11	12	13	14	15	15	16	17	18	22
AR	21	10	10	10	13	13	14	15	15	16	19
AR	22	9	9	10	11	12	12	13	14	15	18
AR	23	13	14	15	15	16	16	17	19	21	22
AR	24	11	12	13	13	14	16	16	17	19	21
AR	25	10	12	13	14	15	15	16	16	18	23
AR	27	7	10	11	11	13	13	14	17	17	32
AR	28	9	10	11	11	12	12	14	14	15	22
AR	32	9	11	12	12	13	14	15	17	19	23
AR	38	10	11	11	12	12	13	14	14	16	22

PER CAPITA ENERGY INTAKE (PROTEIN PER DAY) BY DECILES

AR	2	29	45	53	64	68	73	85	98	99	133
AR	3	32	47	55	64	73	80	83	95	108	137
AR	4	30	43	53	61	68	77	80	89	104	114
AR	5	29	41	50	57	63	69	73	82	83	86
AR	6	31	49	57	63	71	78	85	87	95	120
AR	7	32	43	51	56	63	66	70	77	75	87
AR	8	28	44	51	57	64	68	72	78	89	73
AR	9	29	47	54	62	69	75	78	83	95	82
AR	10	39	52	59	67	75	80	87	97	102	128
AR	11	34	44	50	56	63	68	72	79	84	73
AR	13	31	44	51	57	61	66	72	81	84	90
AR	14	35	49	59	66	71	76	86	93	95	112
AR	15	40	52	60	66	73	78	82	90	93	106
AR	16	41	54	62	65	75	81	88	86	101	114
AR	17	40	53	60	64	70	77	83	87	87	97
AR	18	40	52	59	62	67	72	77	80	88	87
AR	19	37	48	55	61	66	69	72	83	80	88
AR	20	38	50	57	63	70	76	83	90	96	113
AR	21	33	47	54	59	65	72	77	86	99	117
AR	22	30	40	47	53	57	64	68	72	81	108
AR	23	33	44	51	56	60	68	71	73	80	105
AR	24	34	46	51	57	62	65	71	76	83	111
AR	25	33	42	48	53	55	62	65	72	81	93
AR	27	33	44	49	56	60	65	70	74	88	68
AR	28	37	48	54	59	64	72	76	89	92	83
AR	32	35	45	50	55	59	62	66	70	77	76
AR	38	35	42	48	53	59	62	65	74	80	81

PER CAPITA ENERGY INTAKE (% CEREAL PROTEIN TO TOTAL PROTEIN) BY DECILES

AR	2	0	0	0	0	0	0	0	0	0	0
AR	3	0	0	0	0	0	0	0	0	0	0
AR	4	0	0	0	0	0	0	0	0	0	0
AR	5	0	0	0	0	0	0	0	0	0	0
AR	6	0	0	0	0	0	0	0	0	0	0
AR	7	0	0	0	0	0	0	0	0	0	0
AR	8	0	0	0	0	0	0	0	0	0	0
AR	9	0	0	0	0	0	0	0	0	0	0
AR	10	0	0	0	0	0	0	0	0	0	0
AR	11	0	0	0	0	0	0	0	0	0	0
AR	13	0	0	0	0	0	0	0	0	0	0
AR	14	82	82	80	79	80	79	76	74	73	68
AR	15	80	80	79	79	78	77	76	75	72	71
AR	16	78	78	77	77	77	76	74	72	70	68
AR	17	81	82	82	81	81	80	80	78	75	71
AR	18	82	81	81	80	79	78	77	76	75	69
AR	19	80	79	79	79	78	78	77	77	76	73
AR	20	81	80	79	78	77	77	76	75	73	68
AR	21	79	80	80	78	78	77	76	76	74	69
AR	22	85	84	84	83	81	81	80	78	75	70
AR	23	79	78	78	77	76	76	74	72	69	65
AR	24	80	80	78	78	77	75	75	73	70	65
AR	25	81	80	79	78	77	77	75	75	72	64
AR	27	81	80	78	78	77	77	74	71	71	56
AR	28	74	73	72	72	70	70	68	68	66	56
AR	32	89	88	86	86	84	82	79	76	73	64
AR	38	89	88	86	85	85	82	79	79	75	65

PER CAPITA ENERGY INTAKE (Z CEREAL CALORIES TO TOTAL CALORIES) BY DECILES

AR	2	0	0	0	0	0	0	0	0	0	0
AR	3	0	0	0	0	0	0	0	0	0	0
AR	4	0	0	0	0	0	0	0	0	0	0
AR	5	0	0	0	0	0	0	0	0	0	0
AR	6	0	0	0	0	0	0	0	0	0	0
AR	7	0	0	0	0	0	0	0	0	0	0
AR	8	0	0	0	0	0	0	0	0	0	0
AR	9	0	0	0	0	0	0	0	0	0	0
AR	10	0	0	0	0	0	0	0	0	0	0
AR	11	0	0	0	0	0	0	0	0	0	0
AR	13	0	0	0	0	0	0	0	0	0	0
AR	14	89	89	87	86	86	85	82	79	77	70
AR	15	88	87	86	86	85	84	81	80	77	73
AR	16	85	85	84	83	83	82	80	76	75	71
AR	17	88	88	89	87	87	85	85	83	79	72
AR	18	92	92	92	91	89	88	88	87	86	80
AR	19	88	87	87	86	85	84	83	83	81	75
AR	20	87	86	85	84	83	83	82	80	78	70
AR	21	85	86	86	84	84	83	81	81	78	73
AR	22	91	90	89	88	87	87	85	82	78	73
AR	23	85	84	84	82	81	81	79	75	71	65
AR	24	87	86	84	84	83	82	82	79	74	69
AR	25	88	87	85	84	82	83	80	80	77	68
AR	27	88	86	85	85	82	82	80	76	76	55
AR	28	80	79	78	78	76	76	74	74	72	60
AR	32	96	95	92	92	90	88	85	81	77	67
AR	38	95	94	92	90	90	87	84	84	80	66

PER CAPITA ENERGY INTAKE (% OIL CALORIES TO TOTAL CALORIES) BY DECILES

AR	2	4	5	5	4	4	5	4	4	6	6
AR	3	3	3	4	4	4	4	5	5	5	6
AR	4	2	3	3	3	3	3	3	3	3	4
AR	5	2	2	3	3	3	3	3	3	4	8
AR	6	2	2	3	3	3	3	3	4	4	6
AR	7	2	2	2	2	3	3	3	4	4	8
AR	8	2	2	2	2	3	3	3	3	4	4
AR	9	2	2	2	2	3	3	3	3	3	5
AR	10	2	3	3	3	3	3	3	3	3	5
AR	11	2	3	3	3	3	3	3	4	4	6
AR	13	2	2	2	3	3	3	3	4	4	6
AR	14	2	2	3	3	3	3	3	3	4	5
AR	15	2	2	3	2	3	3	3	3	3	4
AR	16	2	2	3	3	3	3	3	4	4	4
AR	17	3	3	3	3	3	3	4	4	4	7
AR	18	0	0	0	0	0	0	0	0	0	0
AR	19	0	0	0	0	0	0	0	0	0	0
AR	20	3	3	3	3	4	4	4	4	4	6
AR	21	3	3	3	4	4	4	4	4	4	5
AR	22	3	3	3	3	3	3	4	4	4	4
AR	23	3	3	3	3	3	3	4	4	4	5
AR	24	3	3	3	3	4	4	4	4	4	5
AR	25	3	3	3	3	4	4	4	4	4	5
AR	27	3	4	4	4	4	4	5	5	5	9
AR	28	3	3	3	3	4	4	4	4	4	6
AR	32	3	4	4	4	4	4	5	5	5	6
AR	38	4	4	4	5	5	5	5	5	5	8

PER CAPITA ENERGY INTAKE (% SUGAR CALORIES TO TOTAL CALORIES) BY DECILES

AR	2	2	2	3	3	3	4	4	4	6	7
AR	3	2	2	3	3	3	4	4	5	5	7
AR	4	2	2	2	2	2	3	4	4	4	6
AR	5	2	2	3	3	3	4	4	4	6	6
AR	6	1	2	2	3	3	4	4	5	6	11
AR	7	1	2	2	2	3	4	4	4	7	9
AR	8	2	2	2	2	2	3	4	4	5	7
AR	9	1	1	2	2	2	3	4	4	4	5
AR	10	1	2	2	2	2	3	3	3	4	6
AR	11	2	2	2	2	2	3	3	3	4	8
AR	13	1	2	2	2	3	4	4	5	5	9
AR	14	3	3	3	3	3	4	4	5	6	8
AR	15	2	2	3	3	3	3	4	5	6	8
AR	16	2	2	2	3	3	3	4	5	5	7
AR	17	2	2	2	3	3	4	4	4	6	9
AR	18	0	0	0	0	0	0	0	0	0	0
AR	19	2	3	3	3	3	4	4	4	6	9
AR	20	2	2	3	3	3	3	3	4	4	6
AR	21	3	2	2	3	3	3	4	4	4	6
AR	22	3	3	3	4	4	4	5	6	7	8
AR	23	3	3	3	4	4	4	5	6	8	11
AR	24	2	2	3	3	3	2	2	2	5	6
AR	25	2	2	3	3	3	3	4	4	4	7
AR	27	1	2	2	2	2	2	3	3	3	9
AR	28	2	2	2	2	3	3	3	3	3	6
AR	32	2	2	3	3	3	3	4	4	5	7
AR	38	3	3	3	3	3	4	4	4	5	8

PERSONS BELOW POVERTY LINE

I.D.	ROUND	YEAR	Rs. 30	Rs. 40	Rs. 52
AU	8	55	11	25	46
AU	9	55	8	22	42
AU	10	56	5	19	40
AU	11	57	14	31	51
AU	13	58	12	29	47
AU	14	59	10	28	48
AU	15	60	11	30	50
AU	16	61	10	30	51
AU	17	62	10	30	51
AU	18	63	10	28	51
AU	19	65	15	32	57
AU	20	66	16	40	64
AU	21	67	21	47	66
AU	22	68	27	53	69
AU	23	69	22	48	66
AU	24	70	19	42	59
AU	25	71	21	44	64
AU	27	73	20	43	63
AU	28	74	25	49	71
AU	32	78	22	42	66
AU	38	83	19	47	69